EXAMINING THE ROLE OF EMOTIONS AS A MEDIATOR OF INTERFACE DESIGN EFFECTS IN AN ONLINE RETAIL SETTING

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P. W. Ballantine

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The main objective of this study was to examine how Web-based shopping environments influence the emotional states of consumers, and how these emotions subsequently affect their attitudes and behavioural intentions. To achieve this aim, this study drew theoretical guidance from the Mehrabian-Russell environmental psychology framework (Mehrabian and Russell 1974b). Building upon the concept of information rate outlined in this framework, this study proposed that two aspects of a Web-based shopping environment would affect the emotional states of pleasure and arousal. The two independent variables examined in this study were the *level of interactivity* and the *depth of information* provided by a Web-based shopping environment. A conceptual model was then developed outlining the relationship between these variables and the emotional states of pleasure and arousal, and the effect of these emotional states upon the response variables of Attitude toward the Website, Attitude toward the E-tailer, and Purchase Consideration.

To empirically examine this model, a Web-based experiment (using a 3 x 3 between-subjects factorial design) was conducted, where subjects were exposed to a simulated online store for digital cameras. A total of 360 responses were collected

from Web users in Australia and New Zealand. To help analyse the dependence relationships outlined in the conceptual model, ANCOVA, two- and three-stage hierarchical regression, and path analysis were used. The results of the study suggest that level of interactivity was a better predictor of pleasure and arousal than depth of information. Moreover, pleasure was found to be a better predictor of the response variables included in the conceptual model than arousal. The implications of these findings are discussed, along with directions for future research.

ACKNOWLEDGEMENTS

The saying 'time flies when you're having fun' seems a strange phrase to use when writing the acknowledgements section of a thesis. Yet, almost three years after embarking on a journey towards a PhD degree at the University of Canterbury, this saying is somewhat appropriate. While this thesis represents the tangible output of approximately three years work, my time spent at Canterbury seems short, and this is no doubt due to several people I have had the pleasure of working with.

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CHAPTER ONE:

THESIS OVERVIEW

1.1 INTRODUCTION

After only a few years of widespread commercial use, the Internet, and more specifically the World Wide Web (the Web), has fundamentally changed the world of retailing (Enders and Jelassi 2000). Indeed, recent statistics indicate that North American online retail sales equalled US$45 billion in 2000 (Boston Consulting Group 2001), and are predicted to grow to US$1.1 trillion by 2010 (ActivMedia Research 2001). While several authors (e.g., Burke 1997; Evans and Wurster 1999) have provided commentaries about the future of shopping on the Internet, relatively little research effort has focused on the issues related to consumer behaviour and the interfaces provided by Web-based shopping environments. The importance of further research within this area was highlighted by Hoque and Lohse (1999), who argued that the promise of electronic commerce and online shopping greatly depends on user interfaces, and how people interact with computers. It is hoped that this study will add to the growing body of empirical literature related to how consumers interact with Web-based shopping environments, thus furthering our understanding of this new and exciting area.

1.2 BACKGROUND TO THIS STUDY

The aim of this study is to examine how Web-based shopping environments influence the emotional states of consumers, and how these emotions subsequently affect their attitudes and behavioural intentions. To reach this aim, this study draws theoretical guidance from the Mehrabian-Russell (M-R) environmental psychology framework (Mehrabian and Russell 1974b) – a model that has been widely used to

help understand consumer behaviour in traditional bricks-and-mortar retail settings, and in other marketing-related areas like the study of consumers' affective responses to advertising appeals.

Providing the anytime, anyplace access of shopping catalogues (Palmer 1997), the Web has become an area of growing interest to marketers. While the development of the Web as a commercial medium has demonstrated businesses increasing interest in electronic commerce (Wigand 1997), this enthusiasm has not been matched by a clear understanding of the Web, or of the most appropriate marketing practices for this new medium (Maignan and Lukas 1997). Moreover, other authors (e.g., Brännback 1997) have observed that in their rush to establish a presence on the Internet, relatively few companies have pursued any coherent strategy regarding the Web. In terms of retail strategy, much confusion still exists about how changes in the configuration of a website can influence the purchasing behaviour of online shoppers.

With increasing awareness that the configuration of a Web-based shopping interface may provide a source of competitive differentiation (Alba et al. 1997), a number of authors have started to investigate how the various elements of an online environment can affect the purchasing behaviour of consumers. For example, Drèze and Zufryden (1997) examined what impact variables such as different coloured or styled backgrounds, celebrity endorsements, and the use of JavaScript had on the effectiveness of a website that promoted and marketed CD music products. Other authors, such as Mandel and Johnson (1999) have investigated whether web page design can change consumer choice by influencing the importance placed upon various attributes of a product. However, while these studies have provided some

understanding about how the configuration of a website can influence purchasing behaviour, no study, as yet, has considered the mediating role of emotions in the relationship between the configuration of an online shopping environment and the attitudes and purchasing behaviour of consumers.

In traditional bricks-and-mortar settings, research efforts about the effects of retail environments on consumer behaviour owe much to the work of Kotler (1974). Coining the term *atmospherics*, Kotler asserted that buying environments could be purposefully designed to produce specific emotional effects in shoppers, thereby enhancing their purchase probability. Using the framework provided by Mehrabian and Russell (1974b), a number of authors (e.g., Baker, Levy, and Grewal 1992; Donovan and Rossiter 1982; Sherman, Mathur, and Smith 1997) have investigated how retail environments can affect the emotional states of consumers, and how these emotional states, in turn, affect their purchasing behaviour. Overall, the findings of these studies indicate that retail environments are able to evoke affective responses in consumers, and that positive emotional responses to a retail environment can help predict various purchasing behaviours, including a willingness to spend more time within a store, increased liking of a store, and an increase in the amount of money spent at a store.

While found to be an important factor in bricks-and-mortar stores, emotion may also play an integral role in helping understand how consumers respond to the interfaces provided by Web-based shopping environments. Support for such a point-of-view was provided by Kim and Moon (1998), who suggested that it is especially important to take emotions into account when designing human-computer interfaces. Given that the success of electronic commerce systems lies in the wide adoption of

such technologies by consumers, the authors argued that the success of any online environment may depend on the first impression consumers have of the interface provided. The design of Web interfaces that evoke a positive emotional response in consumers is also important, as such interfaces will encourage consumers to return to a particular website, a matter of critical importance to online retailers. However, the question of what elements of a Web-based shopping environment actually elicit emotions in consumers remains largely unresolved.

Clues as to what components of an online shopping environment may evoke an emotional response in consumers are provided by the M-R framework. Drawing from information theory, Mehrabian and Russell (1974b) outlined a general measure of environmental stimulation that was termed *information rate.* Incorporating such dimensions as complexity, crowding, symmetry, and novelty, the authors contended that the information rate of any environment will create an emotional response in an individual, and that this emotional response will predict their behaviour – such as a desire to stay in or leave that environment. Other authors have also explored how the level of information provided by a stimulus can affect individual behaviour. For example, building on Miller's (1956) 'magical number seven', several authors (e.g., Jacoby, Speller, and Berning 1974; Jacoby, Speller, and Kohn 1974) have examined how information load can influence consumer behaviour. Similarly, Berlyne (1960; 1971) investigated how collative properties can affect an individual's response to environmental stimuli.

For the purpose of this study, two variables will be examined with regard to their effect on the emotional states of consumers while interacting with a Web-based shopping environment. These two variables include the *level of interactivity*, and the

depth of information provided by a Web-based shopping interface. Based upon the work of Mehrabian and Russell (1974b), and the findings of previous research that has applied the M-R framework to bricks-and-mortar retail settings, both variables can be seen as being conceptually similar to the idea of information rate. However, although several authors have examined the effects of interactivity on the Web (e.g., Häubl and Trifts 2000; McMillan 2000), no study has yet explored how interactivity may affect the emotional states of consumers while shopping at an online retailer. Similarly, while other authors (e.g., Shankar, Rangaswamy, and Pusateri 1999; Shankar, Smith, and Rangaswamy 2000) have examined the effects of the depth of information provided by an online interface, again, no study has explored the effects of this variable upon the emotional states of consumers while using a Web-based shopping environment. Moreover, no research has yet investigated how consumers' emotional responses to an online shopping environment may affect their subsequent attitudes and purchasing behaviour.

1.3 RESEARCH OBJECTIVES

Based upon the discussion provided in Section 1.2, this study has two main research objectives. These include:

i. to determine how the level of interactivity, and the depth of information offered by a Web-based shopping environment influences the emotional states of consumers; and

ii. to determine the effect of these emotional states on the attitudes and behavioural intentions of consumers after being exposed to the interface provided by a Web-based shopping environment.

1.4 THESIS OUTLINE

This thesis will be divided into six chapters. A brief outline of each of these chapters is as follows.

- Chapter One provided an overview of this study.

- Chapter Two will provide the main literature review for this study. The chapter will focus upon the literature that is related to consumers use of Web-based shopping environments, in addition to the role of emotion in consumers' responses to retail settings.

- Chapter Three will present a discussion of the conceptual model to be examined in this study. The literature relevant to the component parts of this model will be reviewed, after which the research hypotheses for this study will then be proposed.

- Chapter Four will discuss the methodological aspects of this study, including the development of the online experiment and questionnaire, the selection of the sample, and the procedures used to collect data.

- Chapter Five will present the results of the statistical analyses of the data collected.

- Chapter Six will discuss the major findings of this research. The practical implications arising from these findings, the limitations of this research, and directions for future research will also be noted.

CHAPTER TWO:

LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this chapter is to provide a literature review related to the main areas of interest in this study. This chapter will begin by providing a brief overview of the Web itself, and the commercial opportunities provided by this new medium. Next, the literature related to retailing on the Web and online shopping environments will be reviewed. To understand the potential role of emotions when consumers interact with Web-based shopping environments, the literature which has examined how emotions can affect consumer behaviour in bricks-and-mortar retail settings will then be reviewed. This will include an overview of the M-R framework, and its application in the marketing literature. Finally, the literature related to the two variables of interest in this study will be discussed. Building on the information presented in this chapter, the conceptual model to be examined in this thesis will be introduced in Chapter Three.

2.2 AN OVERVIEW OF THE WORLD WIDE WEB

The Web has been conceptualised as a platform which rides upon the Internet (Pitt, Berthon, and Watson 1996). Described as a *hypermedia computer-mediated environment*, the Web provides a combination of *hypertext* and *multimedia* (Hoffman and Novak 1996), where hypertext refers to the non-sequential writing of information that can be connected together by different paths or links, while multimedia provides access to both static (e.g., text, images, and graphics) and dynamic (e.g., audio, full-motion video, and animation) content. Using browser software such as *Microsoft Internet Explorer* or *Netscape Navigator*, an individual is

able to navigate the Web using hyperlinks to display information on their computer screen, regardless of where the source of that information is physically located.

A number of authors have identified several types of opportunities available to marketers using the Web. In one of the earliest articles about the commercial opportunities offered by the medium, Hoffman, Novak, and Chatterjee (1995) identified six main uses of the Web. These included: online storefronts, Internet presence sites, content sites, malls, incentive sites, and search agents. Pitt, Berthon, and Watson (1996) observed that the Web can be used by marketers for purposes such as projecting a favourable corporate image, providing product information, fostering and encouraging consumer involvement with a product range, and handling customer complaints, queries, or suggestions. Additionally, it was argued by Berthon, Pitt, and Watson (1996) that the Web provides a level playing field for all companies, where opportunities to access the Web are equal regardless of size, and where barriers to entry are relatively low.

Beyond identifying the commercial opportunities provided by the Web, several authors have noted that the Web-related activities of an organisation may depend upon the characteristics of the products being sold. For example, Alba et al. (1997) argued that products selected in bricks-and-mortar environments on the basis of search and credence attributes are more amenable to electronic retailing, while products purchased on the basis of experience are best suited to traditional retail settings. Similarly, this perspective was also shared by Peterson, Balasubramanian, and Bronnenberg (1997). Defining search goods as those that can be evaluated from externally provided information, and experience goods as those which need to be personally inspected or tried, the authors commented that a consumer may use

traditional transaction channels to experience a good, before using a Web-based transaction channel to purchase it. Moreover, Palmer and Griffith (1998a; 1998b) argued that the website design activities of an organisation may depend upon what proportion of a company's product offerings are information based.

Although many authors have been quick to extol the opportunities available to marketers using the Web, Hoffman and Novak (1997) suggest that the medium differs from traditional commercial environments in three main ways. First, the Web is described as a virtual, many-to-many hypermedia environment that incorporates interactivity between people (i.e., person-interactivity) and computers (i.e., machine-interactivity). Accordingly, the Web is not a simulation of a real-world environment, but instead provides an alternative to real-world environments. Second, the virtual environment provided by a Web interface introduces a competency issue that does not exist as fundamentally in the real-world. Similarly, authors such as Cook and Coupey (1998) have observed that due to differences in computing capacity (e.g., hardware, software, and connectivity resources), not all consumers will experience the Web in the same way. Third, consumers are able to engage in the process of navigating the Web by exhibiting experiential (e.g., netsurfing) and goal-directed (e.g., online shopping) behaviours. Such approaches to surfing behaviour when navigating the Web are conceptually similar to hedonic and utilitarian typologies of consumer behaviour (e.g., Babin, Darden, and Griffin 1994) in offline environments. Both categories of online behaviour are considered to have important implications for the commercial development of the Web (Hoffman and Novak 1997).

Extending these ideas, Hoffman and Novak (1996) introduced the concept of *flow* to help understand consumer navigation behaviour in hypermedia computer-

mediated environments. Using the definition of flow provided by Csikszentmihalyi (1977) as the 'process of optimal experience', Hoffman and Novak (1996) argued that flow could be facilitated by machine-interactivity, and would result in a state of highly focused attention, awareness, and concentration when consumers interact with a Web environment. Based upon the idiosyncrasies of the Web outlined in the previous paragraph, the authors also argued that flow could be further enhanced by consumers perceiving a balance between their navigational skills and the challenges provided by a Web-based environment, and that the state of flow was applicable to consumers exhibiting both experiential and goal-directed behaviours.

2.3 WEB-BASED SHOPPING ENVIRONMENTS

2.3.1 An Introduction to Web-Based Shopping Environments

As outlined in Section 1.2, the purpose of this study is to examine how the configuration of a Web-based shopping environment can influence the emotional states of consumers, and how these emotions subsequently affect their attitudes and behavioural intentions. Given this focus, it is necessary to first define what is meant by the term Web-based shopping environment. According to Russell and Mehrabian (1976, p. 62), an environment can be defined as "...anything that is external to the person whose behavior is being explained and that can be measured independently of that person – including both the objects purchased and the setting in the case of consumer behavior." However, as noted in the previous section, the Web cannot be considered an environment in the real-world sense of the word, but instead provides a virtual environment which people can experience through a computer screen.

Adding to this definition, the term Web-based shopping environment builds upon the concept of the online storefront that was defined by Hoffman, Novak, and

Chatterjee (1995). Consequently, Web-based shopping environments are retail websites that offer direct sales through the Internet via an online catalog, or other, more innovative format. Using the interface provided by a Web-based shopping environment, consumers are able to order products by clicking icons, and/or by entering information into fill-out forms. In an international context, popular Web-based retailers include Amazon.com and CDNow.com, while in New Zealand, well known online retailers include SoundsNZ.com and Woolworths.co.nz.

Following Hoffman, Novak, and Chatterjee (1995), several opportunities and challenges have been identified for Web-based shopping environments. With regard to opportunities, they have the potential to be more efficient than direct marketing or in-store shopping, as well as providing increased opportunities for customisation and relationship marketing. In terms of challenges, access speeds can make it frustrating for consumers to shop using the Web, while security and privacy issues are also perceived to be a primary concern for users. Finally, the unknown role of consumer behaviour issues when people interact with Web-based shopping environments is another challenge faced by online retailers, and also provides the main impetus for this study.

2.3.2 Examining Consumer Behaviour and Web-Based Shopping Environments

While there has been increasing interest in how consumers interact with and respond to Web-based shopping environments during the past few years, relatively little empirical research exists within the subject area. Given the recent nature of the Web as a technological phenomenon, this paucity of empirical research is perhaps not surprising. However, this lack of research also makes it difficult to draw firm conclusions about issues related to consumer behaviour and Web-based shopping

environments. Accordingly, Table 2.1 provides an overview of the main findings of the research literature that has investigated issues related to both online retailing and consumers use of Web-based shopping environments.

As illustrated in Table 2.1, research related to online retailing and consumers use of Web-based shopping environments has been piecemeal in nature, thus making it difficult to group the published empirical literature into common thematic streams. For example, authors have examined a range of topic areas such as what types of products are more suited to Web-based retailing (e.g., Liang and Huang 1998), what design characteristics of a website affect consumer purchase behaviour (e.g., Lohse and Spiller 1999; Mandel and Johnson 1999; Richmond 1996), what behavioural differences exist between consumers purchasing products online rather than offline (e.g., Andrews and Currim 2000; Degeratu, Rangaswamy, and Wu 2000), and the characteristics of consumers who are more likely to buy online (e.g., Donthu and Garcia 1999; Li, Kuo, and Russell 1999). At the organisational level, other authors (e.g., Brynjolfsson and Smith 2000; Chen and Leteney 2000; Griffith and Krampf 1998) have examined the strategies and tactics adopted by Web-based retailers. As yet however, the role of emotion when consumers interact with Web-based shopping environments remains an important research area that has not been explored.

The integral role of emotion when designing human-computer interfaces was highlighted by Kim and Moon (1998). The authors noted that interfaces may elicit a variety of emotions ranging from the basic affective feelings such as joy or fear, to non-basic feelings such as trustworthiness or sophistication. However, the article provided by Kim and Moon (1998) was an exploratory study that examined the role of emotion when consumers used a cyber-banking interface, and also did not use a

Citation	Purpose of Study	Findings
Richmond (1996)	Attempted to quantify the characteristics of a website that would encourage consumers to buy online.	Found that most negative concerns about online shopping (e.g., lack of selection, concerns about quality, and concerns about security) were perceptions arising from the two-dimensional nature of Web-based shopping environments. When three-dimensional environments were used, they had a major impact on perceptions about selection, quality, and security.
Drèze and Zufryden (1997)	Examined the impact of four descriptor attributes on the effectiveness of a website that promoted and marketed CD music products.	Effectiveness measures of number of pages accessed and time spent on the website were found to be explained by the four descriptor attributes: background, image size, sound file display, and celebrity endorsement. Additionally, JavaScript, frames, and the operating system used by a visitor to the website also helped explain the effectiveness measures.
Griffith and Krampf (1998)	Conducted a two-stage study to examine the Web-based strategic objectives of the top 100 retailers in the United States.	Discovered that of those 100 retailers, 64 had established and were maintaining websites. With regard to the three strategic objectives of online sales, communication, and customer service, 16 (25%) were using their website to achieve all three objectives, 42 (65.6%) were using their website to achieve one or two of these objectives (mostly customer service), and 6 (9.4%) were not using their website for any of these three strategic objectives.
Liang and Huang (1998)	Used five products with different characteristics (books, shoes, toothpaste, microwave ovens, and flowers), and attempted to determine what types of products are more suited to online retailing.	Some products more suitable for marketing on the Web than others. Books and flowers were more likely to be ordered using the Web than shoes, toothpaste, or microwave ovens. Suggested that this may be due to the differences in the perceived transaction cost of each product, where the higher the perceived transaction cost when compared to that of a traditional channel, the less likely a product would be purchased using the Web.

Table 2.1 – Review of Literature Related to Online Retailing and Web-Based Shopping Environments

Citation	Purpose of Study	Findings
Spiller and Lohse (1998)	Conducted exploratory research to classify online retail stores into meaningful groups.	Identified five distinct categories of Web-based retail stores using factor analysis and cluster analysis. Categories included super stores, promotional stores, plain sales stores, one page stores, and product listings. Also found that most online stores had few service features, limited product selection, and poor interfaces.
Donthu and Garcia (1999)	Exploratory research aimed at gaining insights as to who shops on the Internet, and to understand the characteristics, motives, and attitudes of online shoppers.	The average Internet shopper is different from the average Internet user. The Internet shopper is older and earns more money than the average Internet user. Internet shoppers also more convenience oriented, variety seeking, innovative, impulsive, and less risk averse than non-shoppers.
Jarvenpaa and Tractinsky (1999)	Sought to validate a model of the antecedents and consequences of consumer trust in online retailers within a cross-cultural setting.	Perceived retailer reputation had a more significant effect on consumer trust than retailer size, although no strong cultural effects were found. Results also tentatively suggested that greater experience with the Web was associated with lower trust being placed in an online retailer.
Li, Kuo, and Russell (1999)	Proposed and tested a model of consumer online buying behaviour.	Found that six variables (education, experiential orientation, perceived accessibility, perceived distribution utility, convenience orientation, and channel knowledge) were robust predictors of the online buying status (i.e., non, occasional, and frequent) of consumers in the United States.
Lohse and Spiller (1999)	Using a set of attributes adapted from the store image literature, examined how the design of an online retail store could influence traffic and sales at a Web-based cybermall.	Each additional product included within an online store was found to increase traffic. The inclusion of a Frequently Asked Questions (FAQ) section was associated with more traffic, while improved product lists were found to have a positive effect of sales. A feedback section in an online shopping site was associated with lower traffic and higher sales. A greater number of links from other locations within a cybermall, in addition to promotion on the cybermall entrance screen were also found to generate more traffic and sales.

Table 2.1 – Review of Literature Related to Online Retailing and Web-Based Shopping Environments (continued)

Citation	Purpose of Study	Findings
Mandel and Johnson (1999)	Examined whether web page design can affect consumer choice by influencing the importance placed upon the various attributes of a product.	Peripheral cues can have a significant effect upon consumer choice in Web-based shopping environments. Specifically, it was found that the background pictures or colours used in a website were able to affect attribute weights, and ultimately, product choice.
Shankar, Rangaswamy, and Pusateri (1999)	Developed and tested a conceptual framework to help explain the main and moderating effects of the online medium on consumer price sensitivity (price importance and price search).	Results indicated that the online medium does not have a main effect on price importance, but that it does increase price search. However, some aspects of the online medium were found to dampen price sensitivity. Specifically, websites were able to reduce price sensitivity by providing in-depth information (both price and non-price) through the use of a highly interactive interface. Additional to these main effects, the online medium was found to moderate the effects of several other factors, all helping to dampen price sensitivity.
Swaminathan, Lepkowska-White, and Rao (1999)	Sought to examine some of the factors influencing online purchasing behaviour.	Perceived vendor characteristics, particularly price competitiveness and ease of cancelling orders were found to affect purchase frequency on the Web. Security or privacy issues were not of much concern to the average consumer. Moreover, consumers who are primarily motivated by convenience are more likely to make purchases online, while those consumers who value social interaction are less interested in shopping on the Web.
Van den Poel and Leunis (1999)	Investigated the effectiveness of the Web as a channel of distribution in comparison with other alternatives. Also examined the effects of three risk relievers on the evaluation of alternative distribution channels.	Internet offers that included the three risk relievers (selling at reduced prices, money-back guarantee, and well-known brands) were evaluated considerably better than mail-order offers. The Web was also highly accepted as an information source and reservation device. However, using the Web for all channel functions (including physical delivery) was evaluated less favourably.

Table 2.1 – Review of Literature Related to Online Retailing and Web-Based Shopping Environments (continued)

Citation	Purpose of Study	Findings
Andrews and Currim (2000)	Examined the behavioural differences between consumers attracted to shopping online relative to consumers shopping in a traditional bricks-and-mortar supermarket.	For two distinct product categories (margarine and laundry detergent), differences were found between consumers attracted to shopping online and consumers shopping at bricks-and-mortar supermarkets. Compared to traditional supermarket consumers, online consumers were less price sensitive, preferred larger sizes to smaller sizes (or at least had weaker preferences for smaller sizes), had much stronger size loyalty, did more screening on the basis of brand names but less screening on the basis of sizes, and had stronger choice set effects.
Brynjolfsson and Smith (2000)	Compared the pricing behaviour of 41 Web-based and conventional retailers for two categories of homogeneous products (books and CDs).	Prices for books and CDs sold via the Web were, on average, 9-16% less than the identical items sold through conventional channels. Web-based retailers were also found to change prices in smaller increments than conventional retailers, with substantial and systematic differences occurring in prices across online retailers.
Chen and Leteney (2000)	Examined the key management issues and critical success factors in online retailing based on three case studies of Internet start-up companies.	Outlined six factors as being critical for successful online retailing: (1) easy access to information on a wide range of products, (2) the ability to personalise service, (3) ensuring both the simplicity and security of transactions, (4) winning the confidence of suppliers, (5) having the ability to deliver worldwide and on time, and (6) being able to integrate old and new systems within an organisation.
Degeratu, Rangaswamy, and Wu (2000)	Used the product categories of liquid detergent, soft margarine spread, and paper towels to explore the effects of brand name, price, and sensory and non-sensory search attributes in both online and traditional supermarkets.	Brand names were more important online in some categories, but this was dependent on the extent of information available to consumers, where brand names were more valuable when less product attribute information was available online. Sensory search attributes had a lower impact on choices in an online environment, and non-sensory attributes had a greater impact on choices made online.

Table 2.1 – Review of Literature Related to Online Retailing and Web-Based Shopping Environments (continued)

Citation	Purpose of Study	Findings
Häubl and Murray (2000)	Examined the role of electronic recommendation agents in the construction of preferences when consumers interact with a Web-based shopping environment.	Found a mere-inclusion effect, where the attributes used to calibrate a shopping-based recommendation agent were rendered more prominent than the attributes not included in the agent. Preference construction effect also persisted beyond the agent-assisted shopping trip, and into subsequent choice tasks in which the agent was no longer present.
Häubl and Trifts (2000)	Investigated consumers use of interactive decision aids (recommendation agents and comparison matrices) in decision-making in online shopping environments.	Both types of decision aid had an effect on consumer decision-making. Recommendation agents were found to reduce consumers' search effort for product information, decrease the size but increase the quality of their consideration sets, and improve the quality of their purchasing decisions. Comparison matrices led to a decrease in the size but an increase in the quality of consumers' consideration sets, and were also found to have a positive effect on some aspects of decision quality.
Huang (2000)	Explored the role of varying levels of information load (measured by the dimensions of complexity and novelty) upon consumers' online exploratory and shopping behaviour.	Determined that novelty keeps consumers exploring online shopping sites, while complexity helps induce impulse purchases. Proposed that novelty is critical in shaping attitudes, delivering content, and soliciting responses, whereas complexity encourages online transactions.
Lynch and Ariely (2000)	Tested the conditions under which lowered search costs should increase or decrease price sensitivity while shopping online. Varied three different search costs (search cost for price information, search cost for quality information within a given store, and search cost for comparing between two competing online stores) while consumers bought wine from two competing online retailers.	Lowering the search cost for quality information found to reduce price sensitivity. Price sensitivity for wines that were common to both stores increased when cross-store comparisons were made easy. Consumer welfare gains were produced by lowering all three search costs, thus making information environments more transparent. When comparisons between stores were difficult, the market share of common wines was proportional to share of distribution, but when store comparisons were made easy, market share returns to distribution were found to decrease significantly.

Table 2.1 – Review of Literature Related to Online Retailing and Web-Based Shopping Environments (continued)

Citation	Purpose of Study	Findings
Novak, Hoffman, and Yung (2000)	Examined how eight constructs that form part of a compelling online experience were related to the perceived importance of features found in a Web-based shopping environment.	Consumers that scored above the median on the constructs related to a compelling online experience were, in general, more likely to rate as important those features that characterised a "smooth" online shopping experience. These features included easy ordering, easy payment, easy to cancel, easy to contact, easy returns, and quick delivery. Customer support emerged as key to a compelling online shopping experience.
Shankar, Smith, and Rangaswamy (2000)	Developed and tested a conceptual framework of the relationship between satisfaction and loyalty, and the role of the online medium (Web) on this relationship.	Levels of customer satisfaction for services chosen online was found to be the same as those for services chosen offline, however loyalty to the service provider was higher when the service was chosen online rather than offline. Online customer satisfaction was also found to increase with the depth of information provided by a website.
Szymanski and Hise (2000)	Explored the role that consumer perceptions of online convenience, merchandising (product offerings and product information), site design, and financial security play in the satisfaction assessments of online shoppers.	Convenience, product information, site design, and financial security found to have a significant influence on the satisfaction levels of online shoppers ("e-satisfaction"). Moreover, convenience had the greatest impact on satisfaction levels, with site design being the second most important. Product offerings were not found to be significant.
Mathwick, Malhotra, and Rigdon (2001)	Developed and tested an experiential value scale (reflecting the benefits derived from perceptions of playfulness, aesthetics, customer "return on investment", and service excellence) in both a Web-based and catalogue shopping context.	Found that the perceived return on financial, temporal, and behavioural investment was related to preferences for online shopping. Conversely, catalogue shopping was perceived to deliver entertainment and visual appeal that was either missing from, or, was not noticed in a Web-based shopping environment.
Miyazaki and Fernandez (2001)	Examined risk perceptions among consumers with different levels of Internet experience, and how these risk perceptions were related to their online shopping activity.	Higher Internet experience and the use of other remote purchasing methods (e.g., telephone and mail-order shopping) were related to lower levels of perceived risk toward online shopping, which in turn resulted in higher online purchase rates.

Table 2.1 – Review of Literature Related to Online Retailing and Web-Based Shopping Environments (continued)

recognised theory of emotions, such as that provided by the M-R framework used in this study. Although cognitive factors may account for store selection and most planned purchases within a store, the store environment and the emotional responses of consumers may be important determinants of their ultimate purchasing behaviour (Sherman, Mathur, and Smith 1997). Consequently, it becomes critically important to examine how Web-based shopping environments influence the emotional states of consumers, and how these emotions affect their attitudes and purchasing behaviour.

2.4 EMOTION AND WEB-BASED SHOPPING ENVIRONMENTS

2.4.1 An Introduction to the M-R Environmental Psychology Framework

To help understand how the interface configuration of a Web-based shopping environment can affect the emotional states of consumers, and how these emotional states can influence their attitudes and purchasing behaviour, the research literature that has examined the role of emotion in bricks-and-mortar retail settings provides some guidance. Although research about the effects of emotion in traditional retail environments owes much to the work of Kotler (1974), it was not until Donovan and Rossiter's (1982) paper *Store Atmosphere: An Environmental Psychology Approach* that research in this area was popularised. Within their paper, the authors introduced the M-R framework, a model that follows the Stimulus-Organism-Response (S-O-R) paradigm, suggesting that it provided a parsimonious description of environments, intervening variables, and behaviours that are relevant to retail settings. Specifically, the M-R model posits that environmental stimuli (S) affect the emotional states of pleasure and arousal (O), which then, affect approach or avoidance behaviours (R).

Since the publication of their original paper, the M-R framework has been used to examine the effects of variables such as music (e.g., Dubé, Chebat, and

Morin 1995; Yalch and Spangenberg 2000), colour (e.g., Bellizzi and Hite 1992), and crowding (e.g., Hui and Bateson 1991; Machleit, Eroglu, and Mantel 2000) on consumer behaviour in traditional retail store environments. Additionally, the M-R model has been used in other contexts such as advertising (e.g., Olney, Holbrook, and Batra 1991; Pavelchak, Antil, and Munch 1988). Table 2.2 provides a summary of how the M-R framework has been applied in the marketing literature. However, before starting to examine how the M-R framework may be used to help understand how consumers interact with Web-based shopping environments, a more in-depth overview of the M-R model, and how it has been used in both the retailing and marketing literature will first be provided.

2.4.1.1 Conceptualising Environmental Stimuli in the M-R Framework

As noted by Donovan and Rossiter (1982), while the M-R framework is particularly strong in specifying the relationships between intervening variables and response outcomes, it leaves the issue of an appropriate stimulus taxonomy largely untouched. Within their seminal book on the subject area, Mehrabian and Russell (1974b), contended that any systematic research in the field of environmental psychology necessitates a limited set of basic variables that characterise everyday environments. While experimental psychologists had previously described stimulus configurations using sensory dimensions such as hue, temperature, or loudness of sound, Mehrabian and Russell (1974b) argued that this approach failed to provide the parsimony required for studies of environmental problems where a need exists to describe settings that include stimulation in all the sense modalities simultaneously, as well as spatial and temporal variations in each modality. Drawing guidance from information theory, the authors proposed a general (i.e., non-specific) measure of environmental stimulation that would be applicable across many physical and social

Citation	Purpose of Study	Findings
Donovan and Rossiter (1982)	Tested the M-R environmental psychology model in retail settings.	Pleasure found to be a determinant of approach-avoidance behaviours (including spending behaviour) in a store. Arousal found to increase time spent in a store, and willingness to interact with sales personnel. Dominance not found to relate to in-store behaviours.
Holbrook, Chestnut, Oliva, and Greenleaf (1984)	Explored the relationships between a personality variable (verbalising/visualising), type of game (verbal/visual), performance (success/failure), perceptions (complexity), and emotions (pleasure, arousal, and dominance) in a playful consumption experience.	Found that performance, perceived complexity, and personality-game congruity determine emotional responses, and that performance itself depends on previous performance and various ability-related individual characteristics.
Pavelchak, Antil, and Munch (1988)	Examined the effects of Super Bowl XX on the emotions (pleasure and arousal) of consumers, and how these emotional reactions influenced their ability to recall advertisements broadcast during the game.	Recall found to be negatively related to emotional intensity (defined by arousal and pleasure polarisation), but unrelated to emotional pleasure. Overall, arousal was found to be related to recall much more strongly than it was to pleasure.
Dawson, Bloch, and Ridgway (1990)	Sought to explore how two psychological states, shopping motives and transient emotions (pleasure and arousal), affected the behaviour of consumers at a large outdoor crafts market.	Consumers with strong product or experiential motives reported the most pleasure and arousal while at the market. However, pleasure and arousal were found to have negligible effect on consumers' purchasing behaviour.
Hui and Bateson (1991)	Explored the importance of perceived control in service settings by manipulating two situational features of a service encounter, consumer density and consumer choice, and examining their effects on the emotional (pleasurable) and behavioural responses of consumers.	Results confirmed the importance of perceived control in mediating the effects of two situational features of the encounter, consumer density (number of consumers present within a service setting) and consumer choice (whether a consumer is in a service setting as a result of their own volition), upon the pleasantness of the service experience and on consumers' approach-avoidance responses to the service encounter.

Table 2.2 – Applications of the Mehrabian-Russell Framework in the Marketing Literature

Citation	Purpose of Study	Findings
Olney, Holbrook, and Batra (1991)	Focused on the variance in the time viewers spend watching television advertising as a result of three attitudinal components (hedonism, utilitarianism, and interestingness), two emotional dimensions (pleasure and arousal), and by the uniqueness of advertising content.	Advertising content found to explain viewing time, and these effects were mediated by the emotional dimensions and components of attitude toward the ad via two alternate routes to viewing time: (1) uniqueness → arousal → interestingness → viewing time, and (2) feelings and uniqueness/uniqueness squared → pleasure → hedonism → viewing time.
Baker, Levy, and Grewal (1992)	Investigated the effects of ambient (lighting and music) and social (number and friendliness of employees) cues on consumers pleasure, arousal, and willingness to buy.	Ambient cues found to interact with social cues to influence consumers' pleasure, while social cues influenced arousal in the store environment. Both pleasure and arousal were, in turn, found to have a positive effect on consumers' willingness to buy.
Bellizzi and Hite (1992)	Tested consumers' affective responses (pleasure and arousal) to red and blue coloured shopping environments.	The blue shopping environment was found to evoke more pleasurable feelings than the red shopping environment. Colour was not found to have an effect on arousal.
Holbrook and Gardner (1993)	Examined the connection between emotional responses (pleasure and arousal) and the time people spend listening to music.	Tempo found to strongly affect arousal, while listening time follows a non-monotonic relationship that peaks at intermediate levels of arousal, and where these peaks shift from left to right as pleasure increases.
Donovan, Rossiter, Marcoolyn, and Nesdale (1994)	Extended Donovan and Rossiter (1982) by using a broader range of shoppers, measuring emotions during the shopping experience, and recording the effects on actual shopping behaviour.	Pleasure, as rated five minutes into the shopping experience was found to be a predictor of additional time spent within a store and incremental spending. Pleasure and arousal also shown to be additional to cognitive factors such as variety/quality of merchandise, and value for money.
Chebat, Filiatrault, Gélinas-Chebat, and Vaninsky (1995)	Explored the impact of waiting attribution and mood (using the dimensions of pleasure, arousal, and dominance) upon consumers' assessments of service quality.	Established that pleasure impacts on two dimensions of service quality (empathy and assurance), but that mood did not affect perceptions of service reliability, tangibility, or reaction. Consumers' mood also found to affect the interpersonal aspects of a service encounter.

Table 2.2 – Applications of the Mehrabian-Russell Framework in the Marketing Literature (continued)

Citation	Purpose of Study	Findings
Dubé, Chebat, and Morin (1995)	Investigated the effect of music-induced pleasure and arousal on consumers' desire to affiliate in buyer-seller interactions.	Desire to affiliate was positively associated with pleasure and arousal. Pleasure had a stronger positive impact under low and high arousal than under a moderate level, whereas arousal had a stronger effect under low and high pleasure than at a moderate level.
Babin and Darden (1996)	Examined the effects of mood (pleasure) on both spending and satisfaction with a retailer.	Mood found to influence spending, but also to have a greater effect on customer satisfaction with a retailer. Moreover, while negative moods did not affect spending, these negative moods had a greater effect upon consumer evaluations of satisfaction than positive moods.
Sherman, Mathur, and Smith (1997)	Explored how consumer emotions (pleasure and arousal) mediated the relationship between store environments and purchasing behaviour.	Social factors and the design of the store found to have a positive effect on pleasure, and ambience positively affected arousal. Pleasure had a positive influence on money spent and liking of the store, while arousal had a positive impact on money spent within the store, time spent in the store, and the number of items purchased.
Aylesworth and MacKenzie (1998)	Attempted to understand the impact of context induced moods (pleasure) on the processing of embedded television commercials.	Advertisements placed in programs that induced negative moods were found to be processed less systematically than ones placed in programs that put viewers in a positive mood.
Holbrook and Gardner (1998)	Used 32 musical stimuli varying in their ability to evoke pleasure and arousal to examine the role of motivation and emotions in determining duration of consumption.	Found support for the prediction that pleasure would have a positive effect on consumption duration as measured by listening time, and that this relationship would appear for those in the intrinsically motivated enjoyment condition, but would disappear for those in the extrinsically motivated task condition.
Kempf (1999)	Examined the role of both cognitive and affective (pleasure and arousal) responses to a product trial for two product types: hedonic and functional.	For hedonic products, felt arousal during the trial was higher than for functional products. Moreover, affective responses were found to be significant antecedents of subjects' evaluations of the trial experience.

Table 2.2 – Applications of the Mehrabian-Russell Framework in the Marketing Literature (continued)

Citation	Purpose of Study	Findings
Wirtz and Bateson (1999)	Tested a model that integrated affect (pleasure and arousal) with the standard satisfaction model used in consumer research.	Confirmation/disconfirmation found to have a direct and positive effect on pleasure, with both, in turn, having a direct and positive effect upon satisfaction. The hypothesised role of arousal could not be confirmed.
Machleit, Eroglu, and Mantel (2000)	Explored the mediating role of emotions (pleasure and arousal) upon the relationship between retail crowding and shopping satisfaction.	Emotions found to only partially mediate the relationship, where any decrease in shopping satisfaction due to crowding is moderated by expectations of crowding and personal tolerance for crowding.
Mattila and Wirtz (2000)	Examined how two dimensions of affect (pleasure and arousal) contribute to customer evaluations of different types of services.	Results suggested that both pleasure and arousal, the two dimensions of affective responses to the preprocess service environment, may interact in determining postpurchase evaluations.
Wirtz, Mattila, and Tan (2000)	Introduced a new variable called "target-arousal level" to further understand the role of pleasure and arousal in the satisfaction evaluation process within service settings.	The traditional pleasure-arousal interaction effect limited to high target-arousal situations. Suggested that optimal arousal theories (e.g., Berlyne 1960) might provide a framework to understand the satisfaction-arousal link in low target-arousal situations.
Yalch and Spangenberg (2000)	Investigated how music that varied by degree of familiarity affected consumers' emotional states (pleasure, arousal, and dominance), shopping durations, and merchandise evaluations.	Consumers reported they shopped for longer when exposed to familiar music, when in fact they actually shopped for longer when they were exposed to unfamiliar music. Shorter shopping times when exposed to familiar music were related to increased arousal. Moreover, although emotional states affected product evaluations, these effects were not directly related to the degree of familiarity of the music played.
Mattila and Wirtz (2001)	Examined how the congruency of music (none, pleasant low arousal and high arousal music) and scent (none, pleasant low and high arousal scents) affects in-store evaluations and behaviour.	When ambient music and scent were congruent with each other in terms of their arousing qualities, consumers rated the environment much more positively, exhibited higher levels of approach and impulse purchasing behaviour, and experienced greater satisfaction than when these cues were at odds with each other.

Table 2.2 – Applications of the Mehrabian-Russell Framework in the Marketing Literature (continued)

settings. This was termed the *information rate*, or "load" of an environment, where the load of an environment is described using dimensions such as complexity, unity, diversity, congruity, artificiality, crowding, symmetry, novelty, and meaningfulness.

Mehrabian and Russell's (1974b) conceptualisation of information rate grew in tandem with pioneering work of Daniel E. Berlyne (1960; 1971), who introduced the term *collative properties* as a means of combining all the sensory dimensions experienced by an individual into a single dimension. Thus, collative properties cannot be defined by a single sensory dimension, but instead refer to comparisons, such as the relations among sensory features, or changes over time between sensory features. Berlyne (1971) also contended that the essential quality of any collative variable can be described by the amount of information provided by a stimulus. For example, many pieces of information are needed to represent a complex stimulus, whereas just a few are required to represent a simple stimulus. Like Mehrabian and Russell (1974b), this idea led to the use of information theory in the description of a stimulus. The use of information theory within environmental psychology was best summarised by Attneave (1959), who stated:

> *Perhaps the most fundamental concept of information theory is that of a continuum extending from extreme lawfulness, or redundancy, or regularity on one hand, to extreme disorder, or unpredictability, or uncertainty on the other. One end of this continuum is homogeneity, the other chaos. It seems fairly evident, on the face of things, that those objects which are most pleasing to an observer lie somewhere between these two extremes. One does not stare for long at a blank canvas, because it is too simple, nor at the detail of a gravel road, because it is too complex* (p. 503).

According to Berlyne (1971), the attractiveness of environmental stimuli is a function of their complexity. Stimuli characterised by an optimal level of complexity are assumed to be most attractive, whereas stimuli deviating from this optimal level (i.e., stimuli of higher or lower complexity) are predicted to be less attractive. In the context of a store environment, Spies, Hesse, and Loesch (1997) considered that the important characteristics of a retail setting that would determine their complexity are information rate and layout. In a bricks-and-mortar store environment, the authors argued that components of information rate may include whether a retail store is modern or obsolete, out of the ordinary or commonplace, surprising or boring, and interesting or uninteresting. Moreover, it may be assumed that if information rate is too high, customers will feel overloaded, while customers can become bored if the information rate is too low. The authors also posited that similar assumptions can be made for layout, arguing that store layout should be clear and not too simple, so there is a possibility of surprise and unexpectedness for the customer entering the store environment.

However, while Mehrabian and Russell (1974b) outlined a general stimulus measure within their framework, the majority of studies that have applied the M-R model to traditional retail environments have instead explored the effects of specific attributes of a store setting on various aspects of consumer behavior. For example, Baker, Levy, and Grewal (1992) examined what impact ambient and social cues had on consumers' retail patronage decisions. Similarly, Sherman, Mathur, and Smith (1997) investigated what effect social, image, design, and ambience factors had on the shopping behaviour of consumers in a retail setting.

2.4.1.2 Emotional Reponses to Environmental Stimuli in the M-R Framework

After encountering a stimulus, the second component of the M-R framework posits that individuals will form an emotional response to the environmental stimuli they have encountered. Mehrabian and Russell (1974b) originally argued that three basic emotional states are responsible for mediating an individual's approach or avoidance behaviours in environmental settings. Adopting the acronym PAD, these three emotional states included: pleasure-displeasure; arousal-non arousal; and dominance-submissiveness. However, more recent studies (e.g., Russell and Pratt 1980) have led to the original M-R framework being modified, and the dimension of dominance-submissiveness has since been removed – although some authors in the marketing literature have still used this dimension (see Table 2.2). Based upon the two remaining dimensions, Russell (1980) proceeded to develop a circumplex model, where the emotional responses of an individual to an environment can be visually represented in two-dimensional bipolar space (see Figure 2.1).

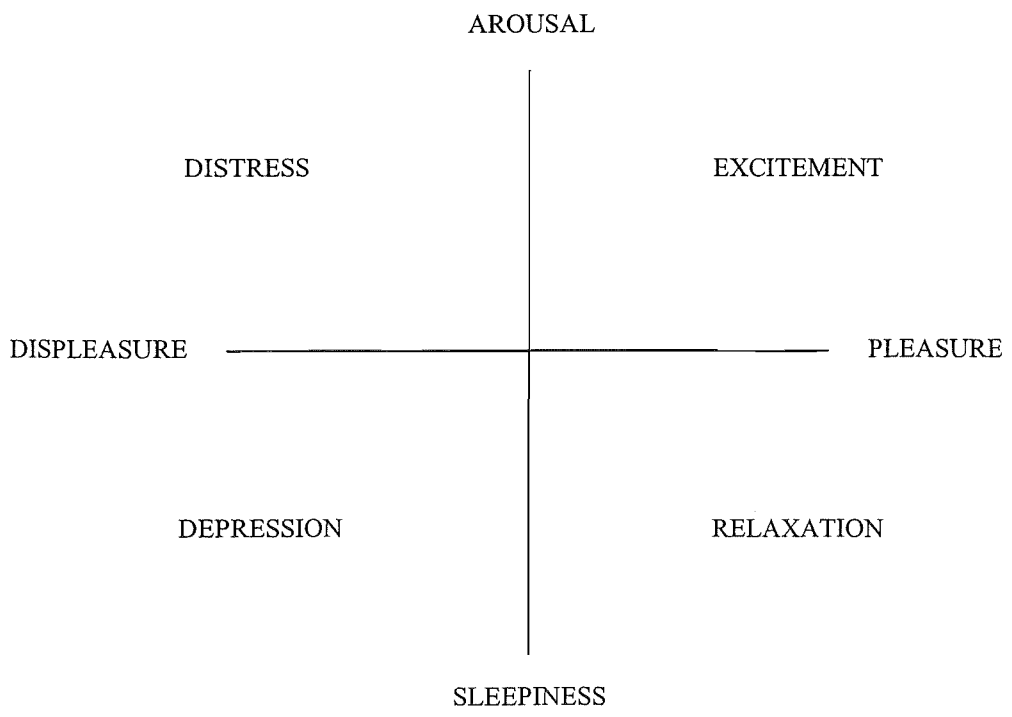

Figure 2.1 – Circumplex Model of Emotions

Support for the bipolarity of the two dimensions of pleasure and arousal was initially established by Russell (1979), where pleasure was found to be the bipolar opposite of displeasure, while arousal was discovered to be the bipolar opposite of sleepiness. In addition, building upon his circumplex model, Russell (1980) outlined how the interrelationships between the emotional dimensions of pleasure and arousal fall into a circle in the following order: pleasure (0); excitement (45); arousal (90); distress (135); displeasure (180); depression (225); sleepiness (270); and relaxation (315). A similar representation of emotions in bipolar space was also developed by Watson and Tellegen (1985), thus providing further support for the bipolarity of emotional states. Following the circumplex model of emotions, Russell and Pratt (1980) developed a set of scales to measure each of the eight dimensions. These scales were found to be reliable, and also approximated the proposed theoretical structure.

In the M-R framework, pleasure is defined as the degree to which a person feels good, joyful, happy, or satisfied in an environment, while arousal refers to the degree an individual feels excited, alert, stimulated, or active in an environment. Based upon the circumplex model of emotions, each individual mood descriptor can be conceptualised as being composed of a certain proportion of pleasure and arousal (Russell and Snodgrass 1987). Specifically, excitement consists of pleasure and high arousal, distress consists of displeasure and high arousal, depression consists of displeasure and low arousal, and relaxation consists of pleasure and low arousal. In addition, the information rate or load of an environment is presumed to be related to the degree of arousal evoked by the environment. A high-load environment (e.g., complex, novel, or crowded) will make a person feel stimulated, excited, and alert. Conversely, a low-load environment will result in feelings of calm, relaxation, or

sleepiness. However, with regard to the levels of pleasure that are induced by an environment, pleasantness occurs at intermediate degrees of information load, and unpleasantness occurs at the extremes of either high or low information load. Support for such an inverted-U shaped relationship has been established by several authors in environmental psychology (e.g., Hampe and Noe 1980; Nasar 1987).

However, while the M-R framework clearly outlines what dimensions of emotional response should be considered, the problem of providing a definition of emotion still exists. Several authors (e.g., Babin, Darden, and Griffin 1992; Bagozzi, Gopinath, and Nyer 1999; Russell and Snodgrass 1987) have observed that the terms affect, emotion, and mood are often used interchangeably in the consumer behaviour literature. In this study, emotions are assumed to be the direct result of an *affective appraisal* of a stimulus. According to Russell and Snodgrass (1987), an affective appraisal is an attribution to some object, event, or place of an affective quality. Moreover, affective appraisals can be distinguished from mood, in that an affective appraisal is directed toward something. Thus, the appraisal refers to a quality of the stimulus being appraised (i.e., a Web-based shopping environment).

Perhaps the most contentious issue surrounding the study of emotion in the consumer behaviour literature is the role of cognition in the formation of emotions. Several authors (e.g., Derbaix and Abeele 1985; Leventhal and Scherer 1987) have reviewed the debate regarding whether emotion is primary and independent of cognition, or secondary and always dependent upon cognition. Modern arguments that cognition is not required for emotion were put forward by Zajonc (1980; 1984), who noted that affective reactions can and do occur without extensive perceptual and cognitive encoding. Conversely, based upon a series of articles which later

culminated into his *magnum opus*, Lazarus (1991) outlined an appraisal theory of emotions, which posited that any emotion is based on the cognitive appraisal of a person-environment situation, where an individual compares an actual state with a desired state.

Within the last few years, some marketing researchers have begun to use the ideas put forward by Lazarus (1991). For example, Nyer (1997) used appraisal theory to study the relationship between cognitive appraisals and consumption emotions, and found that the appraisals of goal relevance, goal congruence, and coping potential were determinants of consumption emotions such as anger, sadness, and joy/satisfaction. Similarly, Stephens and Gwinner (1998) used cognitive appraisal theory to develop their theoretical model of consumer complaint behaviour. However, Lazarus (1999) observes that given the absence of suitable research paradigms, and the difficulty associated with measuring variables that are hypothetical constructs, there is little possibility of a general consensus being reached about how to view the relationship between cognition and emotion.

2.4.1.3 Approach or Avoidance Behaviours in the M-R Framework

The M-R framework postulates that all responses to an environment can be viewed as approach or avoidance behaviours. According to Mehrabian and Russell (1974b), approach or avoidance behaviours can be manifested in the following ways (as summarised by Donovan and Rossiter 1982, p. 37):

1. A desire *physically* to stay in (approach) or to get out of (avoid) the environment; and

2. A desire or willingness to look around and to *explore* the environment (approach) versus a tendency to avoid moving through or interacting with the environment or a tendency to remain inanimate in the environment (avoidance); and

3. A desire to willingness to *communicate* with others in the environment (approach) as opposed to a tendency to avoid interacting with others or to ignore communication attempts from others (avoidance); and

4. The degree of enhancement (approach) or hindrance (avoidance) or *performance and satisfaction* with task performances.

Overall, approach behaviours are related to a willingness or desire to move towards, stay in, explore, interact supportively in, perform well in, and return to the environment. Avoidance behaviours are related to the opposites of the above, such as deteriorated performance and satisfaction, feelings of anxiety and boredom, unfriendliness to others, and a desire to leave the environment and not return. In the store literature, examples of approach or avoidance behaviours include the increased liking of a store, a willingness to further explore and spend more time within a store environment, feelings of friendliness to others in a store, a willingness to return to a store at another time, and an increased likelihood of spending more money than intended (Donovan and Rossiter 1982; Donovan, Rossiter, Marcoolyn, and Nesdale 1994).

While the emotional states of pleasure and arousal are posited as leading to approach or avoidance behaviours, a conditional interaction exists between both these variables and approach or avoidance behaviours. Specifically, in a neutral (i.e., neither pleasing nor displeasing) environment, moderate arousal enhances approach behaviours, whereas very low or very high arousal leads to avoidance behaviours. In a pleasant environment, the greater the arousal, the greater the approach behaviour, and in an unpleasant environment, the higher the arousal, the greater the avoidance behaviour. Therefore, pleasure and arousal are predicted to interact in a way that arousal amplifies approach behaviour in pleasant environments and avoidance behaviours in unpleasant environments.

Strong support has been found for the M-R model in studies of bricks-and-mortar retail settings. For example, Sherman, Mathur, and Smith (1997) found that pleasure had a positive influence on the amount of money spent in, and consumers' liking of a store, whereas arousal had a positive impact on the amount of money and time spent in a store, as well as the number of items purchased in a store. Following the circumplex model of emotions, other authors (e.g., Wakefield and Baker 1998; Wakefield and Blodgett 1999) have, using the original dimensions of pleasure and arousal, examined other emotions with regard to shopping behaviour. Specifically, both articles investigated what impact excitement (a combination of pleasure and arousal) had in determining consumers' responses to retail environments.

2.4.2 Extending the M-R Framework to Web-Based Shopping Environments

While the framework outlined by Mehrabian and Russell (1974b) has proven useful in helping understand how consumers respond to the environments provided by bricks-and-mortar retail settings, the framework may be equally applicable to

helping understand how consumers react to Web-based shopping environments. As outlined in Section 2.4.1.1, the M-R framework originally proposed a non-specific measure of environmental settings that was termed information rate. While research in bricks-and-mortar settings has taken this general stimulus measure and extracted from it specific attributes found in traditional retail settings, factors specific to the configuration of a Web-based shopping environment can also be derived from this generalist measure. Specifically, for the purpose of this study, two attributes of an online shopping environment can be considered conceptually similar to the notion of information rate, as outlined in the M-R framework. These two attributes include: (1) the level of interactivity provided by a Web-based shopping environment, and (2) the depth of information provided by a Web-based shopping environment. Accordingly, the remainder of this section will examine two main areas. First, the literature that has investigated the effects of interactivity with regard to the Web or online shopping environments. Second, the research literature that has explored how consumer behaviour is affected by the depth of information provided by Web-based shopping environments will be reviewed.

2.4.2.1 Effects of Interactivity in Web-Based Shopping Environments

Of the many characteristics of the Web, perhaps its most documented feature is the interactive nature of the medium. Although interactivity is a concept that has been written about by a number of authors (e.g., Fortin 1997; Rafaeli 1988; Steuer 1995), it is also a term that has been widely defined. In part, this may be due to the various contexts in which interactivity has been examined. For example, Rafaeli (1988) posited that interactivity necessitates the interchangability of communication roles, both in face-to-face communication, and in mediated communication settings (e.g., two-way cable systems, electronic text systems, and interactive video games)

as well. Moreover, Steuer (1995) argued that interactivity is comprised of three factors: (1) speed, or the rate at which input can be assimilated into a mediated environment, (2) range, which refers to the number of possibilities for action within a mediated environment, and finally (3) mapping, which consists of the ability of a system to map its controls to changes in a mediated environment. However, this definition was provided with specific reference to virtual reality experiences, and may not be as applicable to a hypermedia computer-mediated environment, such as that provided by the Web.

With regard to the Web, authors have outlined a number of ideas about what is meant by the term interactivity. Harris (1997) observed that confusion exists about the term for both professional web developers and online users. Within her paper, she (Harris) noted how interactivity was described by developers as 'providing a lot of buttons to push' and 'giving people what they want', while online users described interactivity using terms such as 'involvement', 'influence', 'participation', 'real communication', 'control', 'customisation', and 'active exchange'. Similarly, Haeckel (1998) discovered that attendees at a conference on interactive marketing defined interactivity as involving both two-way communication, and a reciprocal exchange between two parties. As noted earlier in this paper however, two types of interactivity are considered to be applicable to the Web (Hoffman and Novak 1996; 1997). The first of these, person-interactivity describes the ability for a person using the Web to communicate with other individuals. The second, machine-interactivity refers to the ability for an individual to access hypermedia content. For the purpose of this study, the term interactivity is used to refer to both types of interactivity. Accordingly, this study adopts the definition of interactivity provided by Fortin (1997), where:

Interactivity is defined as the degree to which a communication system can allow one or more end users to communicate alternatively as senders or receivers with one or many other users or communication devices, either in real time (as in video teleconferencing) or on a store-and-forward basis (as with electronic mail), or to seek and gain access to information on an on-demand basis where the content, timing and sequence of the communication is under control of the end user, as opposed to a broadcast basis (p. 33).

Several studies have examined the effects of differing levels of interactivity on the Web. For example, Fortin (1997) investigated how interactivity affected the attitudes and behavioural intentions of consumers after being exposed to marketing communications on the Web, and found that the most notable impact of interactivity was on the degree to which a website induced feelings of social presence. Ghose and Dou (1998) examined how interactive functions would affect the perceived appeal of various corporate websites, and established that the greater the degree of interactivity, the more likely it was that a website would be considered a top site. Finally, McMillan (2000) found a strong positive correlation between perceived interactivity and attitude toward the website. Additionally, three previous empirical studies have examined the effects of interactivity on consumers use of Web-based shopping environments.

In order to explain both the main and moderating effects of online medium, customer, and intermediary related factors upon the price sensitivity of consumers, a conceptual model was developed and tested by Shankar, Rangaswamy, and Pusateri (1999). Using data gathered from the hospitality industry, the authors examined two

aspects of price sensitivity. First, the weight a consumer attaches to price relative to other attributes (price importance), and second, the likelihood that consumers will search for better prices (price search). Based on the results of their study, the authors found that the higher the interactivity of a Web-based shopping environment (online hotel reservation system), the lower both price importance and price search were for consumers. In a similar study, Shankar, Smith, and Rangaswamy (2000) investigated the relationship between customer satisfaction and loyalty in online and offline environments. Suggesting that a well-designed interactive website could provide greater control of the shopping (reservation) experience, the authors hypothesised a positive relationship between the interactivity of an online shopping environment and customer satisfaction. However, statistical analyses of the data collected by the authors failed to support this relationship.

Finally, Häubl and Trifts (2000) investigated consumers use of interactive decision aids (recommendation agents and comparison matrices) on decision making in online shopping environments. Based on the results of a laboratory experiment, the authors discovered that both types of interactive decision aid had a substantial impact on consumer decision-making. Specifically, recommendation agents were found to reduce consumers' search effort for product information, decrease the size but increase the quality of their consideration sets, and improve the quality of their purchase decisions. Moreover, it was established that comparison matrices led to a decrease in the size but an increase in the quality of consumers' consideration sets, and that they had a positive effect on some aspects of decision quality. Overall, the authors commented that the use of interactive decision aids allowed consumers to make better decisions while expending less effort.

2.4.2.2 Effects of Depth of Information in Web-Based Shopping Environments

Another well documented feature of the Web is the ability for information to be made easily available to consumers in a manner that is normatively equivalent to more traditional sources of information. Extending this point-of-view, Cook and Coupey (1998) argued that the increased availability of information on the Web has the potential to result in more knowledgeable consumers, who are then able to make better quality decisions, and who will then experience greater satisfaction with any purchases they make. However, the authors commented that the effects of the depth or availability of information in Web-based environments on consumer behaviour remains largely unknown, and that more research is required in this area.

To help understand how the depth of information provided by a Web-based shopping environment may affect consumer behaviour, this study draws from the literature that has examined the effects of information load on consumer decision-making. The ability of information load to affect consumer decision-making was first explored by Jacoby, Speller, and Kohn (1974), who explored how brand choice behaviour was influenced by the amount of information provided about each brand. While this original study was replicated by Jacoby, Speller, and Berning (1974), other authors (e.g., Hahn, Lawson, and Lee 1992; Helgeson and Ursic 1993; Keller and Staelin 1987; Malhotra 1982) have also examined how the number of product-related attributes provided by an information source can affect consumer decision-making. Overall, the results of these studies suggest that information overload can cause dysfunctional decision-making to occur if consumers are exposed to too much product-related information. Building on the assertion that information load should be based on the quantity of information provided on a per brand basis (Wilkie 1974), the following definition of depth of information is adopted in this study:

Depth of information is defined as the number of attributes provided on a per-product basis by a Web-based shopping environment.

With regard to past research on Web-based shopping environments, only two studies have examined the effects of the depth of information provided on consumer behaviour. To understand the role of the perceived depth of information provided on a website on the importance shoppers place upon both price and non-price attributes, Shankar, Rangaswamy, and Pusateri (1999) examined the responses of customers in the hospitality industry. Based upon the results of their analyses, the authors found support for their hypothesis that the greater the depth of information provided in an online shopping environment, the lower online price importance and price search would be. Shankar, Smith, and Rangaswamy (2000) posited that good information content allows consumers to make more informed decisions, thus increasing their satisfaction with the choices that they make. Hypothesising a positive relationship between the depth of information made available at a service provider's website and customer satisfaction, the authors were able to establish support for this hypothesis based upon data collected from the hospitality industry.

2.5 CHAPTER SUMMARY

The purpose of this chapter was to provide the main literature review for this study. At the start of this chapter, an overview of the Web was provided, with the types of commercial opportunities provided by this new medium, and the ways in which the Web differs from traditional commercial environments being discussed. Next, the concept of Web-based shopping environments was introduced. After providing an overview of issues related to online retailing, the literature that has

examined online retailing and Web-based shopping environments was reviewed. The critical role of emotion when designing online shopping interfaces was then explored, with the M-R environmental psychology framework being posited as a model which may help understand how the interface configuration of a Web-based shopping environment can affect the emotional states of consumers, and how these emotional states can influence their attitudes and purchasing behaviour. After providing an overview of the M-R framework, the way this model has been applied in the marketing literature was reviewed. Finally, based on the assertions made by the M-R framework, the two variables of interest in this study were introduced.

Building upon the information presented in this chapter, it is now possible to introduce the conceptual model that will be empirically examined in this study. This model, a discussion of the dependence relationships posited, as well as the research hypotheses to be tested in this study are outlined in the next chapter.

CHAPTER THREE:

CONCEPTUAL MODEL

3.1 INTRODUCTION

This chapter aims to present a discussion of the conceptual model that will be examined in this study. To achieve this aim, the chapter will begin by introducing the model itself, before moving on to discuss the literature relevant to the component parts of this model. Based on the discussion for each of the dependence relationships predicted in this model, the research hypotheses to be tested in this study will also be proposed.

3.2 AN OUTLINE OF THE PROPOSED CONCEPTUAL MODEL

Building upon the literature review provided in Chapter Two, an outline of the conceptual model to be empirically tested in this study is presented in Figure 3.1. Although the hypothesised dependence relationships outlined in this model will be discussed more fully later in this chapter, the remainder of this section will provide a brief overview of the model, and how it fits into the S-O-R paradigm posited by the M-R framework.

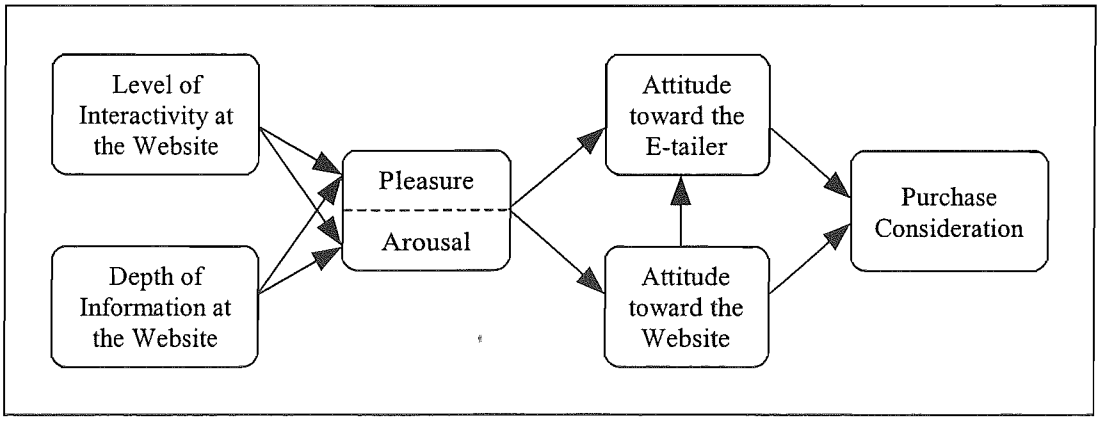

Figure 3.1 – Proposed Conceptual Model

Following the S-O-R paradigm, the stimulus cues (S) that will be examined in this study include the level of interactivity, and the depth of information offered by a Web-based shopping environment. The proposed conceptual model predicts that these stimuli will then affect the affective responses (O) of a consumer by influencing their emotional states, as operationalised by the two dimensions of pleasure and arousal. From here, these emotional states are predicted to affect the response variables (R) of Attitude toward the Website, Attitude toward the E-tailer, and Purchase Consideration. Specifically, the model predicts that pleasure and arousal will affect a consumer's attitude toward the website, and their attitude toward the e-tailer. Additionally, a relationship is predicted to exist between a consumer's attitude toward the website and their attitude toward the e-tailer. Finally, the likelihood that a consumer would purchase items through a Web-based shopping environment is posited to be influenced by a consumer's attitude toward the online shopping interface they are using, and their attitude toward that e-tailer.

3.3 RESEARCH HYPOTHESES

3.3.1 Effects of Level of Interactivity on Pleasure and Arousal

Based on the conceptual model depicted in Figure 3.1, the first two research hypotheses in this study concern the relationship between the level of interactivity offered by a Web-based shopping environment and the emotional states of pleasure and arousal. Following the definition provided in Chapter Two, increased levels of interactivity may allow consumers using a Web-based shopping environment to gain more control of their online experience (e.g., by interactively accessing information from online databases, or by communicating with other people using the website). Past research (e.g., Marmorstein, Grewal, and Fishe 1992) has shown that greater customer control of the shopping experience is associated with increased pleasure,

however higher levels of interactivity in a Web-based shopping environment also have the ability to increase the complexity of the interface provided. With previous research (e.g., Coll and Wingertsman 1990) indicating that either too little or too much complexity in a computer-mediated environment reduces user preference and performance, it is expected that the level of interactivity provided by a Web-based shopping environment will have an inverted-U like relationship with pleasure, where moderate levels of interactivity are associated with higher pleasure. Consequently, the first research hypothesis for this study proposes that:

H1: There will be an inverted-U like relationship between the level of interactivity provided by a Web-based shopping environment and pleasure.

The level of interactivity provided by a Web-based shopping environment is also predicted to affect arousal. Building upon the earlier work of Berlyne, empirical support for a linear relationship between information rate and arousal was provided by Mehrabian and Russell (1974a). Moreover, other authors (e.g., Nasar 1987) have found evidence of a relationship between complexity and arousal. With higher levels of interactivity in Web-based shopping environments increasing the complexity of the interface provided, it is expected that the level of interactivity offered by a Web-based shopping environment will be positively related to consumers' emotional state of arousal. Based on this discussion, the second research hypothesis for this study states that:

H2: There will be a positive relationship between the level of interactivity provided by a Web-based shopping environment and arousal.

3.3.2 Effects of Depth of Information on Pleasure and Arousal

The next two hypotheses in this study are concerned with the relationship between the depth of information provided by a Web-based shopping environment and the emotional states of pleasure and arousal. Shankar, Smith, and Rangaswamy (2000) argued that more information can be made available at the point of purchase in online rather than offline environments. Additionally, increased information has been found to help consumers make more informed decisions, thereby increasing their satisfaction with the purchase process (e.g., Glazer 1991). However, following the definition provided in Chapter Two, increased depth of information may also increase the aesthetic complexity of the interface provided by a Web-based shopping environment. As previously stated, too little or too much complexity has been found to reduce user preference and performance in computer-mediated environments, and it is thus posited that the depth of information provided by a Web-based shopping environment will have an inverted-U like relationship with pleasure. Accordingly, Hypothesis Three proposes that:

H3: There will be an inverted-U like relationship between the depth of information provided by a Web-based shopping environment and pleasure.

Depth of information is also predicted to affect arousal when using a Web-based shopping environment. As stated for Hypothesis Two, previous research has established empirical support for a linkage between information rate and arousal (e.g., Mehrabian and Russell 1974a), and complexity and arousal (e.g., Nasar 1987). With greater levels of depth of information in Web-based shopping environments increasing the aesthetic complexity of the interface provided, a positive relationship

is predicted to exist between depth of information and arousal. Therefore, the fourth research hypothesis states that:

H4: There will be a positive relationship between the depth of information provided by a Web-based shopping environment and arousal.

3.3.3 Effects of Pleasure and Arousal on Attitude toward the Website

The effects of both pleasure and arousal on consumers' attitude toward the website form the fifth and sixth research hypotheses in this study. The construct of Attitude toward the Website (A_{ST}) was first discussed by Chen and Wells (1999), and has since been used by other authors (e.g., Bruner and Kumar 2000; McMillan 2000; Stevenson, Bruner, and Kumar 2000). The construct was originally developed using the literature on Attitude toward the Advertisement (A_{Ad}), and building upon previous definitions of A_{Ad} (e.g., MacKenzie and Lutz 1989), A_{ST} is defined in this study as the *predisposition to respond in a favourable or unfavourable manner to a particular website during a particular exposure occasion.* Within the advertising literature, a number of authors (e.g., Batra and Ray 1986; Burke and Edell 1989; Holbrook and Batra 1987) have found evidence of a positive relationship between emotion and A_{Ad}. Moreover, other authors (e.g., Aylesworth and MacKenzie 1998; Olney, Holbrook, and Batra 1991) have found empirical support for a relationship between the M-R dimensions of pleasure and arousal, and A_{Ad}. Following on from these studies, it is expected that the emotional state of pleasure will have a positive relationship with A_{ST} when consumers use a Web-based shopping environment, so that higher levels of pleasure will be associated with more favourable evaluations of the shopping interface provided. Consequently, the fifth research hypothesis in this study proposes that:

H5: Pleasure experienced while using a Web-based shopping environment will be positively related to A_{ST}.

The emotional state of arousal is also expected to have an effect upon A_{ST}. However, based on the seminal work of Mehrabian and Russell (1974b), and later studies which have applied the M-R framework to bricks-and-mortar retail settings (e.g., Donovan and Rossiter 1982; Donovan et al. 1994), a conditional interaction is predicted to exist between pleasure and arousal. Specifically, in a pleasant Web-based shopping environment, the higher the arousal, the more positive A_{ST} will be. Similarly, in an unpleasant Web-based shopping environment, the higher the level of arousal, the greater consumers' unfavourable evaluations of A_{ST} will be. Thus, Hypothesis Six posits that:

H6: Arousal will be positively related to A_{ST} in pleasant Web-based shopping environments, but inversely related in unpleasant Web-based shopping environments.

3.3.4 Effects of Pleasure and Arousal on Attitude toward the E-tailer

Upon exposure to a Web-based shopping environment, the model outlined in Figure 3.1 posits that in addition to A_{ST}, the emotional states of pleasure and arousal are also predicted to affect consumers' Attitude toward the E-tailer (A_{ET}). Although the A_{ET} construct has not been examined in the literature, like A_{ST}, A_{ET} is defined in this study as the *predisposition to respond in a favourable or unfavourable manner to a particular online retailer during a particular exposure occasion*. Similar to the relationship between A_{Ad} and Attitude toward the Brand (A_B) within the advertising literature, while A_{ST} is conceptualised in this study as a consumer's evaluation of the

interface they encounter while using a Web-based shopping environment, A_{ET} is conceptualised as a consumer's evaluation of the online retailer itself. While the literature provides evidence of a relationship between positive emotion and A_{Ad}, other authors (e.g., Holbrook and Batra 1987) have proposed a direct effect of positive emotion upon A_B. Accordingly, this study predicts that the emotional state of pleasure will have a positive relationship with A_{ET} when consumers interact with a Web-based shopping environment, where higher pleasure will be associated with more favourable impressions of the online retailer. As a result, the seventh research hypothesis proposes that:

H7: Pleasure experienced while using a Web-based shopping environment will be positively related to A_{ET}.

As with Hypothesis Six, the emotional state of arousal is expected to have an effect on A_{ET}. Building upon the work of Mehrabian and Russell (1974b), and the subsequent work of authors (e.g., Donovan and Rossiter 1982; Donovan et al. 1994) in traditional retail settings, a conditional interaction is predicted to exist between pleasure and arousal. Specifically, in pleasant Web-based shopping environments, the higher the level of arousal, the more positive A_{ET} will tend to be. Moreover, in unpleasant Web-based shopping environments, the higher the level of arousal, the greater consumers' unfavourable evaluations of A_{ET} will be. Therefore, the eighth research hypothesis in this study proposes that:

H8: Arousal will be positively related to A_{ET} in pleasant Web-based shopping environments, but inversely related in unpleasant Web-based shopping environments.

3.3.5 Effects of A_{ST} on A_{ET}

While Figure 3.1 predicts that the emotional states of pleasure and arousal will have an effect on both A_{ST} and A_{ET}, the model also posits that A_{ST} will have an effect on A_{ET}. In the advertising literature, Brown and Stayman (1992) note that one of the most common relationships is that A_{Ad} tends to have a strong direct effect on A_B. Moreover, in the context of the Web, Stevenson, Bruner, and Kumar (2000) found that A_{ST} was positively related to A_B. Therefore, this study proposes that A_{ST} will be positively related to A_{ET}, so that more favourable evaluations of the interface provided by a Web-based shopping environment will result in more favourable evaluations of the online retailer. Thus, Hypothesis Nine states that:

H9: There will be a positive relationship between A_{ST} and A_{ET}.

3.3.6 Effects of A_{ST} and A_{ET} on Purchase Consideration

The final two research hypotheses in this study are related to the effects of A_{ST} and A_{ET} on the behavioural intentions of consumers. Similar to the hierarchy of effects found in the advertising literature (Brown and Stayman 1992), it is expected that the behavioural intentions of consumers while using a Web-based shopping environment will be positively related to both A_{ST} and A_{ET}. Thus, the likelihood that a consumer would purchase items through a Web-based shopping environment is posited to be influenced by both their evaluation of the online shopping interface they are using, and their evaluation of the online retailer. Therefore, the tenth and eleventh research hypotheses in this study predict that:

H10: There will be a positive relationship between A_{ST} and the likelihood consumers' would purchase items from an online retailer.

H11: There will be a positive relationship between A_{ET} and the likelihood consumers' would purchase items from an online retailer.

3.4 COVARIATE VARIABLES

In addition to the variables outlined in the conceptual model, two covariates will also be examined with regard to their effect on the dependent variables already discussed. The first covariate is the construct of *Involvement* (e.g., Zaichkowsky 1985; 1986). For the purpose of this study, enduring involvement with the product category of digital cameras (the product featured on the experimental website, see Chapter Four) is of specific interest. Adopting the definition of involvement as the "...perceived relevance of [an] object based on inherent needs, values, and interests" (Zaichkowsky 1985, p. 342), it is expected that respondents who already have an interest in digital cameras may respond differently to the stimulus material provided in this study than those subjects with little interest in the product category.

The second covariate variable included in this study is *Need for Cognition* (Cacioppo and Petty 1982). This variable refers to a tendency for an individual to engage in and enjoy effortful cognitive tasks. Thus, in the context of this research, respondents who enjoy complex cognitive problems may respond more favourably to increased levels of interactivity and depth of information when navigating a Web-based shopping environment. Similarly, those subjects who do not enjoy complex cognitive tasks may respond overly negatively to extreme levels of interactivity and depth of information. Evidence of the role of Need for Cognition in a computerised information search and decision task was discovered by Levin, Huneke, and Jasper (2000), where people with higher Need for Cognition scores processed information in a more focused manner than those people with lower scores.

Finally, socio-demographic variables will also be examined with regard to how respondents react to the stimulus materials provided in this study. For example, prior studies (e.g., Bellman, Lohse, and Johnson 1999; Donthu and Garcia 1999; Li, Kuo, and Russell 1999) have found that socio-demographic variables like age, income, education, and previous Internet experience can act as predictors of online shopping behaviour.

3.5 CHAPTER SUMMARY

The purpose of this chapter was to provide a discussion of the conceptual model to be examined in this study. Once this model was introduced, each of the dependence relationships predicted were then discussed, along with the research hypotheses for each of these relationships. Now, building upon the discussion and research hypotheses presented, it is possible (in the next chapter) to outline the methodological aspects of this study.

CHAPTER FOUR:

RESEARCH METHODOLOGY

4.1 INTRODUCTION

The purpose of this chapter is to outline the research methodology employed in this study. Specifically, this fourth chapter will discuss the experimental design used to examine the effects of level of interactivity and depth of information on the emotional states of consumers when interacting with a Web-based shopping environment, and how these emotions subsequently affect their attitudes and behavioural intentions. After the development of the stimulus material used in this study has been discussed, this chapter will then provide an overview of the experimental procedures followed in this research, including a discussion of how participants were recruited for this study. The development of the questionnaire used in this study will then be reviewed, followed by an overview of the pre-test that was carried out before the main data collection phase of this study. The changes made to the main study as a result of this pre-test will also be explicated. Once the research methodology of this study has been discussed, the fifth chapter will present the results of the statistical analyses, with the sixth chapter presenting a discussion of these results.

4.2 EXPERIMENTAL DESIGN

For the purpose of this study, a 3 x 3 between-subjects factorial design was used, where three levels of interactivity (low, medium, and high), and three levels of depth of information (low, medium, and high) were manipulated as independent variables, thus producing nine experimental conditions. This experimental design is illustrated in Table 4.1.

Level of Interactivity	Depth of Information		
	Low	Medium	High
Low	Condition 1	Condition 2	Condition 3
Medium	Condition 4	Condition 5	Condition 6
High	Condition 7	Condition 8	Condition 9

Table 4.1 – 3 x 3 Between-Subjects Factorial Design (Level of Interactivity by Depth of Information)

4.3 STIMULUS MATERIAL

4.3.1 The DigiCams Online Experimental Website

The stimuli for this experiment consisted of a fictitious Web-based store for digital cameras named *DigiCams Online*. Based upon the factorial design, the nine different store configurations used in this study were created adopting the HTML 4 (*HyperText Markup Language*) standard, and developed using *Microsoft FrontPage 2000*. Additionally, some features of the experimental website (e.g., the random allocation of subjects to one of the nine experimental conditions) were programmed using *JavaScript* and *Visual Basic*. The goal of this study was to manipulate the level of interactivity and depth of information a subject encountered while browsing the DigiCams Online website, while holding all other factors constant. In the experiment, subjects were able to view four pages of the DigiCams Online website. These pages included: (1) an initial welcome or front-page to the website, (2) a product catalogue page listing the cameras sold by DigiCams Online, (3) a product information page for the *Sony DSC-F707* digital camera, and (4) a product information page for the *Canon PowerShot G2* digital camera.

4.3.2 Manipulating Level of Interactivity

The DigiCams Online website used in this study was configured to display three levels of interactivity. In the low condition, the website had few active links.

Specifically, on the initial welcome page, subjects were only able to click on links to camera brand and product accessory pages. No links were available on the second product catalogue page, and on the third and fourth product information pages, the only interactive feature was the ability to click on a button to purchase the featured camera. In the medium condition, and on all four pages, subjects were able to access information on how to contact DigiCams Online. On the initial welcome page, links were also made available to access information on buying a digital camera. The second product catalogue page provided click on buttons in order to purchase the listed products. On the third and fourth product information pages, active links to online reviews for each of the featured cameras, and a link to the homepage of the manufacturer for each of the respective cameras were also provided. In the high condition, subjects were now able to subscribe to a mailing list and use a product search engine on the initial welcome page. Links were also available on this page to participate in an online discussion forum. On the product catalogue page, links were provided in order to access information on each of the listed products. Finally, on the third and fourth product information pages, links were provided to read customer reviews on each of the featured cameras. Moreover, subjects were also able to post their own product reviews, and access a product search engine.

4.3.3 Manipulating Depth of Information

In this study, three levels of depth of information were provided by the DigiCams Online website. The depth of information manipulations occurred in only the third and fourth (product information) pages of the experimental website. In the low condition, ten product attributes (i.e., technical specifications) were provided about each of the featured digital cameras. For the medium and high conditions, twenty and thirty product attributes were provided, respectively.

4.4 EXPERIMENTAL PROCEDURE

4.4.1 Recruitment of Participants

For the purpose of this study, a self-recruited convenience sample of Web users was used. Given the regional nature of digital camera retailing (e.g., different voltage requirements between countries), a localised target population, consisting of Web users aged 18 years or over from either Australia or New Zealand was sought. To encourage participation, a prize draw for two prepay mobile phones was offered as an incentive. Starting on 25th October 2001, participants were invited to take part in this study through announcements made on regional USENET newsgroups (i.e., those newsgroups using either the .aus or .nz prefix), mailing lists, and Web-based discussion boards.

4.4.2 Online Experiment

Upon accessing the experimental website, participants were first shown an introduction page. This page thanked participants for accessing the online study, provided the expected time it would take to complete the study, and outlined the browser (software) requirements needed to take part. Participants were also given the option of viewing the participant consent form which informed them of their rights when taking part in this study. This consent form was consistent with the guidelines provided by the *University of Canterbury Human Ethics Committee.* Next, respondents were provided with a web page outlining the instructions for the study. This instruction page informed respondents that they would be asked to visit and evaluate a proposed shopping website for digital cameras that was still under development. Participants were also told how to navigate through the site, and that although the site they were about to visit was not yet fully operational, that they should not let this influence their opinion of the website in general. After clicking

upon a link at the bottom of the instruction page, participants were then randomly assigned to one of the nine experimental conditions. A copy of these introductory web pages can be found in Appendix One of this thesis.

For each of the nine conditions, the experiment itself consisted of five web pages. The first four pages were comprised of selected screens from the DigiCams Online website, while the fifth page provided a filler task, where respondents were made to read a short guide about consumer rights when purchasing goods via the Internet. An overview of the four DigiCams Online web pages included within this study was provided at the end of Section 4.3.1 of this chapter. A copy of the nine versions of the experimental stimuli used in this study can be found in Appendix Two.

In order to control the flow of the experiment, and to minimise the effects of respondent attrition, the navigational toolbars on each subject's Web browser were deactivated until they had finished taking part in this study. When clicking upon a link or button within the DigiCams Online website, respondents were taken to a web page that informed them that the feature and/or information they had requested was not available for the purpose of this study. However, for each of these pages, a brief description was provided to subjects about what they would normally find on the requested web page had the DigiCams Online website been fully operational. A JavaScript programmed "Go Back" button was also provided on each of these pages, thereby allowing respondents to return to one of the four main web pages of the DigiCams Online website used within this experiment. The final stage of this study asked subjects to fill out a questionnaire about the DigiCams Online website, where respondents provided their opinions and demographic information using drop-down

menus and radio buttons. The development of the questionnaire used in this study is outlined in Section 4.5, and a copy of the questionnaire can be found in Appendix Three.

4.5 QUESTIONNAIRE DEVELOPMENT

4.5.1 An Overview of the Online Questionnaire

The questionnaire used in this study consisted of two main sections. In the first section, a series of questions were asked based upon the constructs identified in the conceptual model outlined in Chapter Three. Questions in this section were also asked in the same order as the relationships posited in the conceptual model. In the second section, a series of demographic questions were asked to help categorise respondents, and to eliminate those subjects failing to meet the criteria for inclusion into the sample later analysed in this study (see Chapter Five, Section 5.2).

4.5.2 Independent Measures (Manipulation Checks)

Perceived Level of Interactivity (INT)

A five-item scale adapted from Fortin (1997) was used to measure the level of interactivity manipulation. Items were measured on a seven-point Likert scale anchored Strongly Agree – Strongly Disagree. The wording of these items can be found in Table 4.2.

Perceived Depth of Information (DEP)

A three-item scale was created to measure the effectiveness of the depth of information manipulation. The wording of these items can be found in Table 4.3. All three items were measured on a seven-point Likert scale anchored Strongly Agree – Strongly Disagree.

4.5.3 Dependent Measures

Pleasure (PL)

The six items provided by Mehrabian and Russell (1974b) were used to measure the emotional state of pleasure. These six items were measured on a nine-point bipolar scale, and included: happy/unhappy, pleased/annoyed, satisfied/ unsatisfied, contented/melancholic, hopeful/despairing, and relaxed/bored.

Arousal (AR)

The emotional state of arousal was also measured using the original six-item scale provided by Mehrabian and Russell (1974b). The six items were measured on a nine-point bipolar scale, and included: stimulated/relaxed, excited/calm, frenzied/ sluggish, jittery/dull, wide awake/sleepy, and aroused/unaroused.

Attitude toward the Website (A_{ST})

This construct was measured by an eleven-item scale that was broken down into three components: *Utilitarianism* (important/not important, informative/ uninformative, helpful/not helpful, and useful/not useful), *Interestingness* (makes me curious/does not make me curious, not boring/boring, and interesting/not interesting), and *Organisation* (not messy/messy, not cumbersome/cumbersome, not confusing/confusing, and not irritating/irritating). All bipolar items were measured on a seven-point scale, and were adapted from Olney, Holbrook, and Batra (1991) and Chen and Wells (1999).

Attitude toward the E-tailer (A_{ET})

The A_{ET} construct was measured using a four-item seven-point bipolar scale that was adapted from a store attitude measure provided by Yoo, Park, and MacInnis

(1998). The four scale items included were: good/bad, like/dislike, favourable/ unfavourable, and positive/negative.

Purchase Consideration (PC)

The likelihood that a subject would consider purchasing a camera from DigiCams Online was measured using a four-item scale adapted from MacKenzie, Lutz, and Belch (1986) that has also previously been used in a Web-based setting (e.g., Bruner and Kumar 2000; Stevenson, Bruner, and Kumar 2000). The four scale items included: certain/uncertain, likely/unlikely, probable/improbable, and possible/impossible. All items were measured on a seven-point bipolar scale.

4.5.4 Covariate Measures

Involvement (INV)

Respondents' enduring involvement with digital cameras was measured with a ten-item scale adapted from Zaichkowsky's (1994) revised *Personal Involvement Inventory* (PII). The ten items measured on a seven-point bipolar scale included: important/unimportant, interesting/boring, relevant/irrelevant, exciting/unexciting, mean a lot to me/mean nothing to me, appealing/unappealing, fascinating/mundane, valuable/worthless, involving/uninvolving, and needed/not needed.

Need for Cognition (NFC)

This construct was measured using ten items selected from the short-form eighteen-item version of the *Need for Cognition* scale provided by Cacioppo, Petty, and Kao (1984). The ten items that were chosen for inclusion in this study was based upon their relevance to the research setting, and a desire for parsimony in the overall length of the questionnaire.

Socio-Demographics

Several socio-demographic questions were asked. These included: subject's physical location while participating in this study, gender, age, geographic location, relative annual household income, level of educational attainment, main occupation, computer processor speed, Internet connection speed, and how the respondent found out about this study. Moreover, three items were included to measure subject's level of expertise with using the Web, including: the number of hours spent each week using the Internet, total years of experience using the Internet, and respondent's self-described proficiency with using the Internet.

4.6 PRE-TEST

Before starting the main data collection phase of this study, an initial pre-test was conducted. The purpose of this pre-test was threefold. First, to examine the effectiveness of the experimental manipulations for all levels of both the level of interactivity and depth of information conditions. Second, to verify that the experimental website was properly programmed, and would work across all hardware/software configurations that may be encountered in the field. Third, to ensure the experimental procedure was understood by subjects, and to highlight any ambiguity in either the instructions for the study or the wording of the questionnaire.

4.6.1 Sample

The sample used for the pre-test consisted of undergraduate students from the University of Canterbury. Students were recruited through the use of an invitational message sent to five e-mail based class lists. A total of 1,256 mailing list recipients were contacted. To encourage participation, a prepay mobile phone was offered as a prize to those people who took part in the pre-test. The pre-test took

place over a 24-hour period, and at the end of this time, a total of 217 responses were obtained (a response rate of 17.3%).

4.6.2 Manipulation Checks

To empirically examine the effectiveness of both manipulations, the two scales for level of interactivity and depth of information were used as manipulation checks. To ensure an equal number of respondents per cell, 37 cases were randomly deleted, thus creating a total sample size of 180 (with 20 subjects per experimental condition). Before examining the success of the experimental manipulations, the dataset was screened for accuracy, missing data, and normality. Subsequent to this, principal components analysis (with Varimax rotation) and Cronbach alpha were then used to assess the unidimensionality and reliability of both scales.

In Tables 4.2 and 4.3 the items used for each scale are presented, along with the mean score and standard deviation for each scale item, and the overall Cronbach alpha value. The total item scale score is calculated as the mean of all items in each respective scale. Both scales were found to be unidimensional, and also showed acceptable levels of reliability.

	Scale Item	Mean	Std Dev
1	This website would allow me to easily communicate with the company if I ever had a specific question or wanted to purchase a product.	5.02	1.40
2	This website could easily let me access other consumers' opinions about the products featured.	4.02	1.55
3	I thought this website had the ability to respond to my specific requests for information so I could access it quickly and efficiently.	5.06	1.29
4	I thought this website really gave me some control (i.e., flexibility) over the content that I wanted to see.	4.83	1.43
5	Overall, I thought this website was highly interactive.	5.09	1.26
	Total Five-Item Scale	**4.80**	**0.96**
	Cronbach's Alpha = 0.72		

Table 4.2 – Level of Interactivity Scale Items

	Scale Item	Mean	Std Dev
1	I thought this website provided detailed information about the products featured.	6.14	1.03
2	This website provided a comprehensive list of the technical specifications of the products featured.	6.08	1.20
3	This website provided information on a large number of product attributes for each of the cameras featured.	5.79	1.10
	Total Three-Item Scale	**6.01**	**0.92**
	Cronbach's Alpha = 0.77		

Table 4.3 – Depth of Information Scale Items

To examine the effectiveness of the two experimental manipulations, two separate ANOVAs were conducted. Using the total scale means as dependent variables, ANOVA (and post-hoc Scheffe tests) were used to determine whether significant mean differences ($p < .05$) existed between the three levels of each experimental condition. The summary results of these analyses are presented in Tables 4.4 and 4.5.

Level of Interactivity (INT)			Depth of Information (DEP)		
Level	**Mean**	**Std Dev**	**Level**	**Mean**	**Std Dev**
Low	4.20	1.01	Low	5.83	1.07
Medium	4.88	0.76	Medium	6.02	0.86
High	5.33	0.72	High	6.17	0.79
Total	**4.80**	**0.96**	**Total**	**6.01**	**0.92**

Table 4.4 – Descriptive Statistics for Level of Interactivity and Depth of Information Manipulations

Scale	SS	df	MS	F
INT	38.78	2	19.39	27.35**
Error	125.46	177	0.71	
DEP	3.47	2	1.74	2.08
Error	147.52	177	0.83	

(*$p < 0.05$; **$p < 0.01$)

Table 4.5 – Results of ANOVAs for Level of Interactivity and Depth of Information Manipulations

Statistical analyses showed that while the level of interactivity manipulation was successful, the depth of information manipulation was not. Consequently, the depth of information manipulation was reconfigured for the main data collection phase of this study. Specifically, in the low condition, a one line product summary was provided. In the medium condition, ten product attributes were listed (the low condition from the pre-test). For the high condition, more technical specifications were added, thus bringing the number of product attributes listed to thirty-seven.

The pre-test also provided verification of the reliability of the experimental website, as no difficulties were reported by respondents. Accordingly, aside from the changes made to the depth of information manipulation, no alterations were required

to the website before commencing the main data collection phase of this study. As a final preparatory step, approval for both the questionnaire and research methodology used within this study was sought from the *University of Canterbury Human Ethics Committee*. Approval for this study was granted on 16th October 2001.

CHAPTER FIVE:

RESULTS

5.1 INTRODUCTION

The aim of this chapter is to present the results of the statistical analyses of the data collected. To achieve this aim, this chapter will be structured around six main sections. In the first section, an overview of the characteristics of the sample used in this study will be presented. Section Two will examine the factor structure and reliabilities of the scales used in the online questionnaire. The effectiveness of the experimental manipulations for level of interactivity and depth of information will be examined in the third section. From here, the eleven research hypotheses proposed in Chapter Three will be sequentially addressed. Accordingly, Section Four will explore the effects of level of interactivity and depth of information on the emotional states of pleasure and arousal. The effects of pleasure and arousal upon two of the response variables posited in the conceptual model (Attitude toward the Website and Attitude toward the E-tailer) will be empirically examined in the fifth section. Finally, the relationships outlined in the conceptual model will be assessed simultaneously through the use of path analysis in Section Six.

5.2 SAMPLE SIZE AND COMPOSITION

As outlined in Section 4.4.1, the main data collection phase for this research started on 25th October 2001. From this date, participants were invited to take part in this study through announcements made on regional USENET newsgroups, mailing lists, and Web-based discussion boards. The experimental website was left open for a three week period, and at the end of this time, 396 questionnaires were submitted. Of these, 379 questionnaires were suitable for inclusion into the final sample. The

decision to remove questionnaires from the sample was based upon a respondent indicating that they did not live in Australia or New Zealand, or deficiencies in the way a subject filled out the questionnaire (e.g., systematic response patterns or a failure to fully complete the questionnaire).

In order to satisfy the assumptions of specific statistical techniques such as ANCOVA, and to avoid any problems caused by unequal cell sizes, 19 cases were randomly deleted, thus creating a total sample size of 360 (with 40 subjects per experimental condition). Before starting the statistical analyses, the raw dataset was screened for any missing values, non-normal distributions, and univariate outliers. 52 cases were found to have missing values on some scale items, however no scale item was found to have missing values in more than 5% of cases. Given this, a mean replacement procedure was implemented as recommended by Tabachnick and Fidell (1996).

Analyses were undertaken to examine the socio-demographic characteristics of the sample. 62% of respondents were male, the other 38% being female. In terms of age distribution, 33% were between 18-24, 31% were between 25-34, while the remaining 36% were 35 years or older. 43% of the sample were from New Zealand, with the remaining 57% being from Australia. 69% of respondents had some level of tertiary education, 46% indicated that they were employed outside the home, while 63% indicated that their annual household income was at the middle- or upper-third of the national average. In terms of Internet expertise, 72% of respondents used the Internet for more than 10 hours a week, 93% had been using the Internet for two years or more, and 67% perceived themselves to be experts at using the Internet. 86% of respondents participated in this experiment from home, with the majority

(52%) finding out about this study through reading USENET newsgroups. While participating in this study, 68% of respondents used a Pentium-based computer, with 63% accessing the Internet via a 56.6kps modem connection. Full information about the socio-demographic characteristics of the sample used in this study can be found in Appendix Four.

5.3 SCALE STRUCTURE AND RELIABILITY

Following the analyses of the socio-demographic data, all scales used in this study were examined for their dimensionality using principal components analysis, and subsequently optimised for internal consistency (reliability) using the Cronbach alpha procedure (Cronbach 1951). Scales were then examined for non-normality and outlier contamination using tests for skewness and kurtosis.

Principal components analysis (with Varimax rotation) was used to assess the underlying structure of the scales used in this study. Both independent measures (level of interactivity and depth of information) were found to be unidimensional. Analysis of the twelve pleasure and arousal items produced two factors, although due to mixed loadings between factors, item six from the pleasure scale and item five from the arousal scale were deleted from the final solution. Once these items were deleted, pleasure and arousal accounted for 49.5% and 16.6% of the variance, respectively. This solution was consistent with the expectations of the M-R model, and accordingly, the two factor solution was retained for later analysis.

Mixed loadings were also found for the A_{ST} scale, and items one and eleven were deleted from the analysis. A three factor solution emerged, and these factors resembled the dimensions posited in the original construct. Specifically, the A_{ST}

subscales for interestingness, utilitarianism, and organisation accounted for 44.6%, 15.1%, and 11.1% of the variance, respectively. The measures for A_{ET} and purchase consideration were unidimensional.

Of the covariate measures, involvement was initially found to be a two-dimensional construct. However, after deletion of a single scale item with a high mixed loading (item three), the construct emerged as unidimensional. High mixed loadings were also found for the Need for Cognition measure. The deletion of three scale items (one, two, and ten) yielded a two factor solution. The first factor, which accounted for 39.3% of variance included statements indicating a preference for cognitively oriented challenges, and was termed the *problem-solving* subscale. The second factor, which accounted for 15.1% of variance consisted of statements that indicated a tolerance for situations requiring little cognitive effort. For the purpose of this study, this factor was termed the *hedonic* subscale. Factor loadings for the multidimensional scales used in this study can be found in Appendix Five of this thesis.

Subsequent to principal components analysis, all scales used in this study were assessed for their internal consistency using the Cronbach alpha reliability procedure. As a result of this process, only item five from the M-R pleasure scale was deleted to improve reliability. All other main scales exhibited acceptable levels of reliability (i.e., Cronbach $\alpha \geq 0.70$). However, two of the subscales found as a result of the principal components analysis (the A_{ST} *organisation* subscale and the Need for Cognition *hedonic* subscale) had coefficient alpha estimates just below the critical 0.70 threshold. Consequently, the interpretation of any analyses conducted using these subscales should be treated with some caution.

Descriptive statistics for the measures used within this study are displayed in Table 5.1 of this chapter. The mean score and standard deviation for each scale are reported, along with statistics for skewness, kurtosis, and Cronbach alpha. All scales were found to be normally distributed, and exhibited acceptable levels of skewness and kurtosis. As stated in the methodology section, all scales aside from the items for pleasure and arousal were measured on a seven-point scale. Pleasure and arousal were measured on a nine-point scale, and following the guidelines set by Mehrabian and Russell (1974b), these items (and the resultant composite scales) were scored on a -4 to 4 basis. Histograms (with normal curves) for all scales are in Appendix Six. A correlation matrix between the scales used in this study is provided in Table 5.2.

Scale		Mean	Std Dev	Skewness	Kurtosis	Cronbach α
Manipulation Checks						
Level of Interactivity	INT	4.72	1.22	-0.66	0.06	0.82
Depth of Information	DEP	5.60	1.34	-1.28	1.30	0.89
Dependent Variables						
Pleasure	PL	1.26	1.40	-0.57	0.50	0.91
Arousal	AR	-0.37	1.29	0.04	0.10	0.82
Attitude toward the Site	A_{ST}	4.97	0.91	-0.41	0.29	0.83
Interestingness subscale	A_{ST}^1	4.55	1.31	-0.58	0.10	0.88
Utilitarianism subscale	A_{ST}^2	5.40	1.06	-0.63	0.53	0.80
Organisation subscale	A_{ST}^3	4.98	1.11	-0.31	0.00	0.65
Attitude toward the E-tailer	A_{ET}	5.23	1.17	-0.68	0.57	0.94
Purchase Consideration	PC	4.33	1.44	-0.37	-0.36	0.91
Covariates						
Involvement	INV	5.36	0.95	-0.66	1.11	0.91
Need for Cognition	NFC	4.57	0.99	-0.14	-0.27	0.73
Problem-Solving subscale	NFC^1	4.61	1.07	-0.28	-0.46	0.70
Hedonic subscale	NFC^2	4.52	1.28	-0.41	-0.32	0.59

Table 5.1 – Descriptive Statistics for Measures (Scales) Used

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	**INT**	1.00													
2	**DEP**	0.50	1.00												
3	**PL**	0.64	0.44	1.00											
4	**AR**	0.34	0.18	0.48	1.00										
5	A_{ST}	0.57	0.45	0.73	0.43	1.00									
6	A_{ST}^{1}	0.47	0.33	0.64	0.57	0.84	1.00								
7	A_{ST}^{2}	0.56	0.57	0.66	0.29	0.80	0.57	1.00							
8	A_{ST}^{3}	0.33	0.18	0.40	0.10	0.70	0.34	0.35	1.00						
9	A_{ET}	0.62	0.42	0.72	0.39	0.77	0.65	0.68	0.48	1.00					
10	**PC**	0.42	0.29	0.50	0.35	0.54	0.50	0.40	0.35	0.57	1.00				
11	**INV**	0.15	0.12	0.24	0.16	0.32	0.32	0.26	0.17	0.24	0.28	1.00			
12	**NFC**	-0.13	-0.10	-0.08	0.00	-0.03	-0.02	-0.09	0.02	-0.09	-0.01	0.05	1.00		
13	NFC^{1}	-0.15	-0.10	-0.12	-0.02	-0.10	-0.07	-0.15	-0.04	-0.15	-0.03	0.04	0.87	1.00	
14	NFC^{2}	-0.07	-0.06	-0.01	0.02	0.05	0.05	0.01	0.07	0.01	0.01	0.05	0.83	0.44	1.00

Correlations greater than 0.10 and 0.15 in absolute value are significant at the 0.05 and 0.01 levels, respectively.

Table 5.2 – Pearson Correlations Between Measures

5.4 MANIPULATION CHECKS

The scales for perceived level of interactivity and depth of information were used as manipulation checks. In Tables 5.3 and 5.4, the items used in each scale are presented. The mean score and standard deviation for each scale item are included, as well as the overall Cronbach alpha value. Additionally, both scales are compared with the results obtained from the pre-test outlined in Chapter 4.

	Scale Item	Pre-Test		Main Study	
		Mean	Std	Mean	Std
1	This website would allow me to easily communicate with the company if I ever had a specific question or wanted to purchase a product.	5.02	1.40	4.90	1.55
2	This website could easily let me access other consumers' opinions about the products featured.	4.02	1.55	4.23	1.74
3	I thought this website had the ability to respond to my specific requests for information so I could access it quickly and efficiently.	5.06	1.29	4.90	1.51
4	I thought this website really gave me some control (i.e., flexibility) over the content that I wanted to see.	4.83	1.43	4.65	1.59
5	Overall, I thought this website was highly interactive.	5.09	1.26	4.90	1.60
	Total Five-Item Scale	**4.80**	**0.96**	**4.72**	**1.22**
	Cronbach α	**0.72**		**0.82**	

Table 5.3 – Level of Interactivity Scale Items (Pre-Test and Main Study)

	Scale Item	Pre-Test		Main Study	
		Mean	Std	Mean	Std
1	I thought this website provided detailed information about the products featured.	6.14	1.03	5.72	1.44
2	This website provided a comprehensive list of the technical specifications of the products featured.	6.08	1.20	5.59	1.55
3	This website provided information on a large number of product attributes for each of the cameras featured.	5.79	1.10	5.48	1.45
	Total Three-Item Scale	**6.01**	**0.92**	**5.60**	**1.34**
	Cronbach α	**0.77**		**0.89**	

Table 5.4 – Depth of Information Scale Items (Pre-Test and Main Study)

Tests for internal consistency confirmed that both scales performed well. All scale items were retained for analysis, as the deletion of any scale item would not have increased reliability. Next, to confirm the effectiveness of the experimental manipulations, two separate ANOVAs were conducted using the total scale means as dependent variables. Post-hoc Scheffe tests were also conducted to determine whether significant mean differences ($p < .05$) existed between the three levels of each experimental condition. Results of these analyses are presented in Tables 5.5, 5.6, and 5.7. These findings are also compared with the results of the pre-test.

Level of Interactivity (INT)	Pre-Test		Main Study	
	Mean	Std Dev	Mean	Std Dev
Low	4.20	1.01	4.00	1.28
Medium	4.88	0.76	4.80	1.02
High	5.33	0.72	5.36	0.93
Total	**4.80**	**0.96**	**4.72**	**1.22**

Table 5.5 – Descriptive Statistics for Level of Interactivity Manipulation

Depth of Information (DEP)	Pre-Test		Main Study	
	Mean	Std Dev	Mean	Std Dev
Low	5.83	1.07	4.61	1.52
Medium	6.02	0.86	5.81	0.90
High	6.17	0.79	6.38	0.80
Total	**6.01**	**0.92**	**5.60**	**1.34**

Table 5.6 – Descriptive Statistics for Depth of Information Manipulation

Scale	SS	df	MS	F
INT	112.66	2	56.33	47.82**
Error	420.49	357	1.18	
DEP	196.33	2	98.16	78.44**
Error	446.78	357	1.25	

(*$p < 0.05$; **$p < 0.01$)

Table 5.7 – Results of ANOVAs for Level of Interactivity and Depth of Information Manipulations

The results indicated that both experimental manipulations were successful. Both effects were found to be large, as calculated by the partial Eta squared statistic ($\eta_p^2 = 0.21$ for level of interactivity and $\eta_p^2 = 0.31$ for depth of information). Post-hoc Scheffe tests confirmed that significant differences ($p < .05$) occurred between the mean ratings given to all levels (low, medium, and high) of the experimental conditions. Pleasingly, the mean value for the pre-test 'low' depth of information condition was similar to rating given to the 'medium' depth of information condition in the main study. This result confirmed the success of the reconfigured depth of information conditions used in the main study.

Trend analyses were also undertaken to verify the nature of the relationship for both manipulations. The trend for the level of interactivity conditions was found to be linear ($F = 94.71$, $p < 0.01$). Evidence of both a linear ($F = 150.58$, $p < 0.01$) and quadratic ($F = 6.30$, $p < 0.05$) trend was found for the depth of information conditions. However, the linear trend accounted for a higher level of explained variance. The shape of the trend for both manipulations is illustrated in Figures 5.1 and 5.2. Visual analysis of the depth of information means plot reveals a levelling-off between the medium and high conditions when compared to the low and medium conditions. This suggests that while respondents were able to discriminate well between low and medium levels of depth of information, they were not able to discriminate as well between medium and high levels of depth of information.

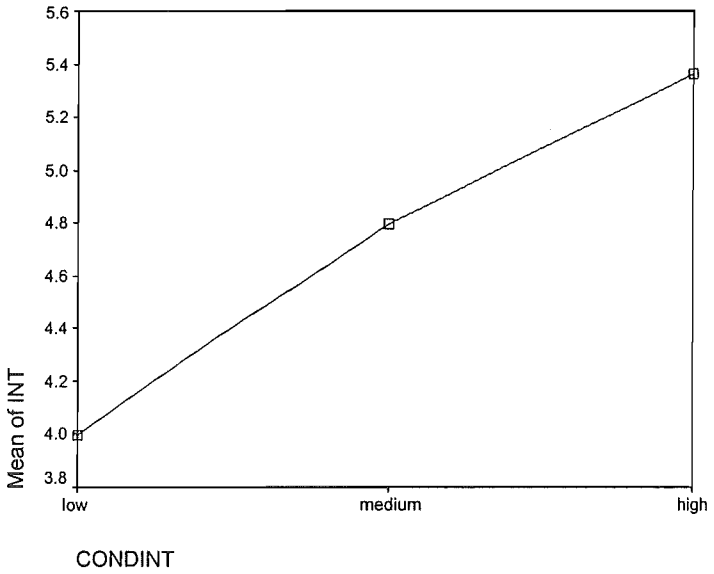

Figure 5.1 – Means Plot for Level of Interactivity Manipulation

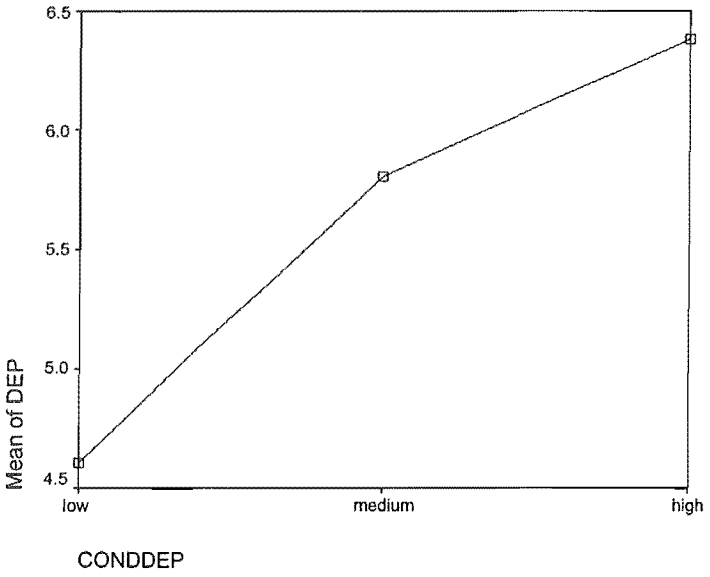

Figure 5.2 – Means Plot for Depth of Information Manipulation

As a final step, the effect of socio-demographic variables on perceived level of interactivity and depth of information was investigated. For level of interactivity, physical location while participating in this study ($F = 4.93$, $p < 0.05$, $\eta_p^2 = 0.01$), gender ($F = 10.71$, $p < 0.01$, $\eta_p^2 = 0.03$), age ($F = 4.51$, $p < 0.05$, $\eta_p^2 = 0.01$), country ($F = 7.86$, $p < 0.01$, $\eta_p^2 = 0.02$), and level of education ($F = 19.98$, $p < 0.01$, $\eta_p^2 = 0.05$) were found to be significant. However, while these findings were statistically significant, the η_p^2 statistic indicates that the effect of these five socio-demographic variables is small.

For depth of information, gender ($F = 10.99$, $p < 0.01$, $\eta_p^2 = 0.03$) and age ($F = 5.49$, $p < 0.05$, $\eta_p^2 = 0.02$) were found to be statistically significant. Again, the η_p^2 statistic was small, and the effect of these socio-demographic variables was not examined further. For both level of interactivity and depth of information, only main effects were found.

5.5 EFFECTS OF INDEPENDENT VARIABLES ON EMOTION

To examine the effects of level of interactivity and depth of information on the emotional states of pleasure and arousal, a 3 x 3 between-subjects analysis of covariance (ANCOVA) was performed. The two covariate variables of Involvement and Need for Cognition were included in the analysis. The independent (grouping) variables used were level of interactivity and depth of information.

The results of the ANCOVA analysis are presented in Table 5.8. This table provides results for both main, interaction, and covariate effects on the dependent variables of interest. Also included in this table are the exact p and η_p^2 values for each effect. Subsequent to this analysis, individual trend analyses were run to verify the nature of the relationship between the treatment effects and the two emotional states of pleasure and arousal. Finally, two-stage hierarchical regression analyses were used to examine the strength of the relationship between perceived level of interactivity and depth of information, and the emotional states examined in this study.

Source and Dependent Variable	Type III SS	df	Mean Square	F	Sig.	η_p^2
INV						
Pleasure	45.00	1	45.00	25.78	**0.00**	0.07
Arousal	14.68	1	14.68	9.12	**0.00**	0.03
NFC						
Pleasure	4.79	1	4.79	2.74	0.10	0.01
Arousal	0.00	1	0.00	0.01	0.93	0.00
INT						
Pleasure	24.60	2	12.30	7.05	**0.00**	0.04
Arousal	4.72	2	2.36	1.46	0.23	0.01
DEP						
Pleasure	10.48	2	5.24	3.00	0.05	0.02
Arousal	3.01	2	1.51	0.94	0.39	0.01
INT x DEP						
Pleasure	14.29	4	3.57	2.05	0.09	0.02
Arousal	9.46	4	2.36	1.47	0.21	0.02
Error Term						
Pleasure	609.14	349	1.75			
Arousal	562.08	349	1.61			
Total						
Pleasure	1280.06	360				
Arousal	642.52	360				

Table 5.8 – Results of ANCOVA Analysis for Pleasure and Arousal

Means and standard deviations for all variables included in the above table for each combination of the two independent variables are presented in Appendix Seven. Involvement provided an adjustment for both emotional states. Specifically, involvement was found to have a medium effect on pleasure ($F = 25.78$, $p < 0.01$, $\eta_p^2 = 0.07$), while also having a smaller effect on arousal ($F = 9.12$, $p < 0.01$, $\eta_p^2 = 0.03$). No significant results were found for Need for Cognition.

Level of Interactivity had a significant effect on pleasure ($F = 7.05$, $p < 0.01$, $\eta_p^2 = 0.04$). However, level of interactivity did not have an effect on arousal. To help interpret these results, the means and standard deviations for pleasure and arousal for each level of interactivity are provided in Table 5.9.

The depth of information provided did not have an effect on either pleasure or arousal, although the result for pleasure did approach significance ($p = 0.051$). The means and standard deviations for pleasure and arousal for each level of depth of information are provided in Table 5.10. No interaction effects between the two independent variables were discovered for either pleasure or arousal, and only main effects will be examined in the remainder of this section.

Level of Interactivity (INT)	Pleasure		Arousal	
	Mean	Std Dev	Mean	Std Dev
Low	0.97	1.60	-0.44	1.41
Medium	1.23	1.25	-0.46	1.30
High	1.59	1.26	-0.21	1.13
Total	**1.26**	**1.40**	**-0.37**	**1.29**

Table 5.9 – Effects of Level of Interactivity on Pleasure and Arousal

As already stated, level of interactivity was found to have a significant effect on pleasure. However, Hypothesis One posited that an inverted-U like relationship would exist between the level of interactivity provided by a Web-based shopping environment and pleasure. Analysis of the results provided in Table 5.9 suggests that level of interactivity had an incremental effect on reported pleasure, and this finding was supported through the use of trend analysis. Specifically, the effect of level of interactivity on pleasure was found to be linear ($F = 12.23$, $p < 0.01$), with no statistical evidence of a quadratic trend. Follow-up Scheffe post-hoc tests also indicated that significant ($p < .05$) differences for reported pleasure occurred only between low and high levels of interactivity, with none found between either low to medium, or medium to high levels. The shape of the trend between level of interactivity and pleasure is illustrated in Figure 5.3.

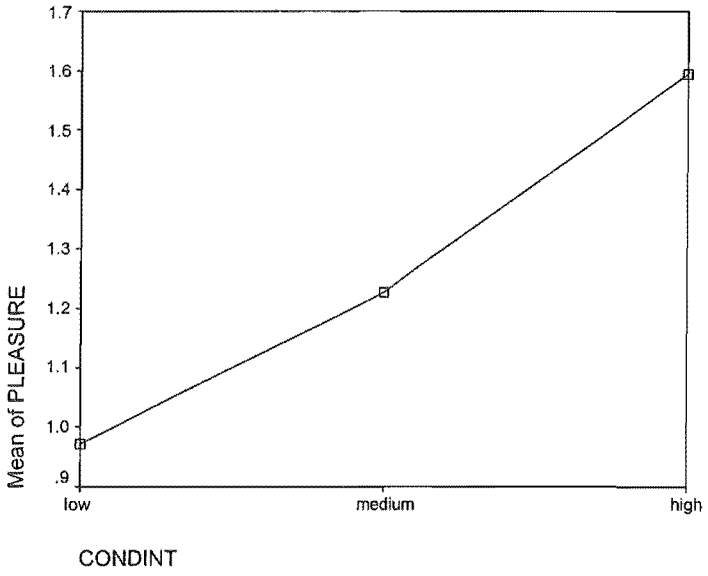

Figure 5.3 – Means Plot for Effect of Level of Interactivity on Pleasure

Hypothesis Two predicted that a positive relationship would exist between the level of interactivity provided by a Web-based shopping environment and the emotional state of arousal. The figures outlined in Table 5.9 suggest that level of interactivity had minimal effect on arousal, as the amount of arousal reported by subjects was similar between all three levels of interactivity. As already stated, the results of the ANCOVA analysis supported this, as level of interactivity was found to have no significant effect on arousal, with trend analysis confirming the absence of a linear relationship between the two variables.

Depth of Information (DEP)	Pleasure		Arousal	
	Mean	Std Dev	Mean	Std Dev
Low	1.05	1.53	-0.42	1.26
Medium	1.29	1.26	-0.45	1.31
High	1.45	1.39	-0.24	1.29
Total	**1.26**	**1.40**	**-0.37**	**1.29**

Table 5.10 – Effects of Depth of Information on Pleasure and Arousal

As with level of interactivity, visual analysis of the results provided in Table 5.10 indicate that depth of information provided an incremental effect on reported pleasure. While the results of the earlier ANCOVA analysis were found to approach significance, there was only evidence of a linear trend ($F = 4.90$, $p < 0.05$) between the two variables. However, this finding fails to support Hypothesis Three, which proposed that an inverted-U like relationship would exist between the depth of information provided by a Web-based shopping environment and pleasure. The shape of the trend between depth of information and pleasure is illustrated in Figure 5.4.

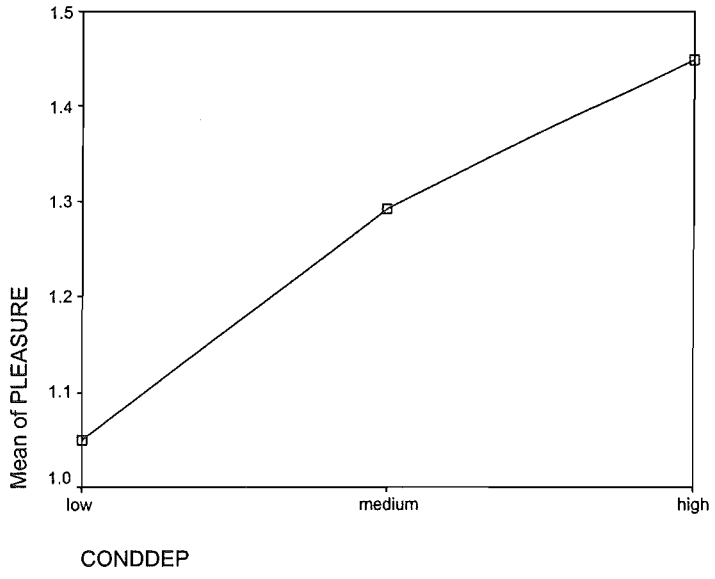

Figure 5.4 – Means Plot for Effect of Depth of Information on Pleasure

Hypothesis Four argued there would be a positive relationship between the depth of information provided by a Web-based shopping environment and arousal. As with the previous arousal hypothesis however, the amount of arousal reported by subjects was similar across all three levels of depth of information (see Table 5.10). Results of the earlier ANCOVA analysis confirmed the lack of an effect on arousal, and trend analysis failed to find support for a linear trend.

In Chapter Three it was also observed that increased control of the shopping experience has been associated with greater levels of customer satisfaction (e.g., Glazer 1991). Given that the multi-item pleasure construct includes satisfaction/ dissatisfaction as a scale item, a follow-up ANCOVA analysis was conducted using this single item. As with the analyses presented in Table 5.8, level of interactivity was found to have a significant effect on satisfaction ($F(2,349) = 7.32$, $p < 0.01$, $\eta_p^2 = 0.04$). Moreover, depth of information was also found to have a significant effect upon satisfaction ($F(2,349) = 3.20$, $p < 0.05$, $\eta_p^2 = 0.02$). A linear trend was found for the effects of both independent variables upon satisfaction ($F = 11.96$, $p < 0.01$ for level of interactivity and $F = 4.70$, $p < 0.05$ for depth of information), with no evidence of a quadratic trend for either variable. Given the similarity of these results with those for the entire pleasure scale, it may be argued that the single satisfaction/dissatisfaction scale item provides a more parsimonious measure of consumer pleasure in Web-based shopping environments.

As a final step, two-stage hierarchical regression was used to examine the strength of the relationship between perceived level of interactivity and depth of information, and both pleasure and arousal. Consistent with the approach taken for the ANCOVA analysis, two-stage hierarchical regression was used to control for the effects of the covariates on the dependent variables of interest. This was achieved by entering the two covariates in the first stage of the regression model, with perceived level of interactivity and depth of information entering the regression model in the second stage. The results of this analysis are presented in Table 5.11.

		Pleasure	Arousal
Stage One (Covariates)			
Involvement		0.14**	0.10*
Need for Cognition		0.00	0.04
ΔR^2		0.07**	0.02*
Stage Two (Independent Variables)			
Perceived Level of Interactivity		0.53**	0.33**
Perceived Depth of Information		0.16**	0.01
ΔR^2		0.38**	0.11**
Overall	R^2	0.45	0.13
	F	71.19**	13.21**
	df	(4,355)	(4,355)

(*$p < 0.05$; **$p < 0.01$)

Table 5.11 – Results of the Two-Stage Hierarchical Regression Analyses (standardised betas) for Pleasure and Arousal

The R^2 value for the covariates was significant for both pleasure ($R^2 = 0.07$, $p < 0.01$) and arousal ($R^2 = 0.02$, $p < 0.05$). As with the ANCOVA analysis, while involvement significantly influenced pleasure ($\beta = 0.14$, $p < 0.01$) and arousal ($\beta = 0.10$, $p < 0.05$), Need for Cognition was not significant for either of the emotional states. The addition of perceived level of interactivity and depth of information into the regression model was significant for both pleasure and arousal ($\Delta R^2 = 0.38$, $p < 0.01$ and $\Delta R^2 = 0.11$, $p < 0.01$, respectively). Perceived level of interactivity was found to significantly influence pleasure ($\beta = 0.53$, $p < 0.01$) and arousal ($\beta = 0.33$, $p < 0.01$). However, perceived depth of information only had a significant influence on the emotional state of pleasure ($\beta = 0.16$, $p < 0.01$).

5.6 EFFECTS OF EMOTION ON RESPONSE VARIABLES

The effects of pleasure and arousal on the response variables of A_{ST} and A_{ET} formed the basis for Hypotheses Five to Eight. However, while pleasure was posited

to be positively related to both A_{ST} and A_{ET}, a conditional interaction was expected to exist between pleasure and arousal for the two response variables. Specifically, in pleasant Web-based shopping environments, arousal was expected to be positively related to A_{ST} and A_{ET}. In unpleasant Web-based shopping environments however, arousal was predicted to be negatively related to both A_{ST} and A_{ET}.

To examine these hypotheses, the methodology employed by Donovan and Rossiter (1982) and Donovan et al. (1994) was adopted. Two regression analyses: one for those respondents who thought *DigiCams Online* provided a pleasant Web-based shopping environment (i.e., pleasure score above 0), and one for subjects who thought the online store provided an unpleasant environment (i.e., pleasure score of 0 or less) were conducted. The results of this split-sample regression analysis are presented in Table 5.12. In addition to the results for A_{ST} and A_{ET}, results are also provided for the three A_{ST} subscales.

	A_{ST}	A_{ST}^1 *(Interestingness)*	A_{ST}^2 *(Utilitarianism)*	A_{ST}^3 *(Organisation)*	A_{ET}
Pleasant Environment (n=293)					
Pleasure	0.51**	0.33**	0.55**	0.27**	0.57**
Arousal	0.11*	0.37**	-0.06	-0.11	0.01
R^2	0.31	0.34	0.28	0.06	0.33
F	63.91**	73.06**	57.41**	9.63**	70.72**
df	(2,290)	(2,290)	(2,290)	(2,290)	(2,290)
Unpleasant Environment (n=67)					
Pleasure	0.47**	0.20	0.32*	0.46**	0.37**
Arousal	0.16	0.35**	0.04	-0.11	0.24*
R^2	0.25	0.16	0.10	0.22	0.20
F	10.70**	6.27**	3.62*	8.91**	7.96**
df	(2,64)	(2,64)	(2,64)	(2,64)	(2,64)
Total Sample (n=360)					
Pleasure	0.68**	0.47**	0.68**	0.46**	0.69**
Arousal	0.11*	0.34**	-0.03	-0.12*	0.06
R^2	0.54	0.50	0.44	0.17	0.51
F	206.13**	175.37**	140.38**	37.27**	188.99**
df	(2,357)	(2,357)	(2,357)	(2,357)	(2,357)

(*$p < 0.05$; **$p < 0.01$)

Table 5.12 – Results of the Regression Analyses (standardised betas) for Effects of Pleasure and Arousal on A_{ST} and A_{ET}

The split-sample regression analysis provided only moderate support for the conditional pleasure-arousal interaction hypothesis. In pleasant Web-based shopping environments, pleasure was found to be a significant predictor of A_{ST} (and its three subscales) and A_{ET}. Arousal was a significant predictor of A_{ST} ($\beta = 0.11, p < 0.05$), and had a higher regression coefficient for the *interestingness* subscale of the A_{ST} construct ($\beta = 0.37, p < 0.01$). Given this subscale included items such as: makes me curious/does not make me curious, not boring/boring, and interesting/not interesting, this result would be expected, as these items tap into the level of cognitive activity evoked by the website. The arousal regression coefficient for A_{ET} and the two other A_{ST} subscales was close to zero.

In unpleasant Web-based shopping environments, pleasure was found to be a significant predictor of all A_{ST} and A_{ET} measures, except for the A_{ST} *interestingness* subscale. However, the results for the effect of arousal were not consistent with the expectations of the conditional pleasure-arousal interaction hypothesis. Specifically, it was anticipated that the regression coefficients for arousal would be significantly negative (i.e., indicating negative perceptions) in unpleasant Web-based shopping environments. Instead, arousal was a significant positive predictor of both the A_{ST} *interestingness* subscale ($\beta = 0.35, p < 0.01$) and A_{ET} ($\beta = 0.24, p < 0.05$). Arousal was found to be a negative predictor for the A_{ST} *organisation* subscale. However, this finding was not significant, and also occurred in pleasant Web-based shopping environments. Overall, poor support was provided for Hypotheses Six and Eight, which proposed a conditional pleasure-arousal interaction for A_{ST} and A_{ET}.

Results for the total sample (i.e., both pleasant and unpleasant environments) showed that pleasure was a significant predictor of all A_{ST} and A_{ET} measures. While

arousal was found to be a significant predictor in three of five instances, the pleasure construct consistently performed better as a predictor for A_{ST} and A_{ET}. The evidence of significant positive relationships between pleasure and both A_{ST} and A_{ET} provides strong support for Hypotheses Five and Seven.

As an additional step, to help assess the relative contribution of pleasure and arousal in explaining A_{ST} and A_{ET}, three-stage hierarchical regression analysis was used. Following the procedure outlined in Section 5.5, the two covariates entered the first stage of the regression model. The scales for perceived level of interactivity and depth of information entered the second stage of the model, while the two emotional states of pleasure and arousal were entered in the third stage. For the purpose of this analysis, only the main A_{ST} scale will be included. The results of this analysis are provided in Table 5.13.

	A_{ST}	A_{ET}
Stage One (Covariates)		
Involvement	0.15**	0.08*
Need for Cognition	0.03	0.02
ΔR^2	0.11**	0.07**
Stage Two (Independent Variables)		
Perceived Level of Interactivity	0.14**	0.24**
Perceived Depth of Information	0.13**	0.06
ΔR^2	0.31**	0.35**
Stage Three (Emotional States)		
Pleasure	0.50**	0.49**
Arousal	0.09*	0.05
ΔR^2	0.17**	0.15**
Overall R^2	0.59	0.57
F	84.67**	76.55**
df	(6,353)	(6,353)

(*$p < 0.05$; **$p < 0.01$)

Table 5.13 – Results of the Three-Stage Hierarchical Regression Analyses (standardised betas) for A_{ST} and A_{ET}

As with the two-stage hierarchical regression in Section 5.5, the R^2 value for the two covariates was significant for both A_{ST} ($R^2 = 0.11$, $p < 0.01$) and A_{ET} ($R^2 = 0.07$, $p < 0.01$). Involvement was found to influence A_{ST} ($\beta = 0.15$, $p < 0.01$) and A_{ET} ($\beta = 0.08$, $p < 0.05$), although Need for Cognition did not have an effect. The addition of the two independent variables into the regression model was significant for A_{ST} ($\Delta R^2 = 0.31$, $p < 0.01$) and A_{ET} ($\Delta R^2 = 0.35$, $p < 0.01$). However, while level of interactivity ($\beta = 0.14$, $p < 0.01$) and depth of information ($\beta = 0.13$, $p < 0.01$) were positive predictors of A_{ST}, only level of interactivity ($\beta = 0.24$, $p < 0.01$) was found to predict A_{ET}. Interestingly however, perceived level of interactivity was a better predictor of A_{ET} than A_{ST}.

Finally, the addition of pleasure and arousal into the regression model was significant for both A_{ST} ($\Delta R^2 = 0.17$, $p < 0.01$) and A_{ET} ($\Delta R^2 = 0.15$, $p < 0.01$). The emotional state of pleasure was found to positively predict A_{ST} ($\beta = 0.50$, $p < 0.01$) and A_{ET} ($\beta = 0.49$, $p < 0.01$), while arousal only helped predict A_{ST} ($\beta = 0.09$, $p < 0.05$). As with previous analyses, the regression coefficients for pleasure were much higher than for arousal (0.50 versus 0.09 for A_{ST}, and 0.49 versus 0.05 for A_{ET}), thus emphasising the importance of pleasure in understanding how people respond to a Web-based shopping environment.

5.7 PATH ANALYSIS OF THE CONCEPTUAL MODEL

The final data analysis stage was to simultaneously assess the relationships outlined in the conceptual model using path analysis. So far, this fifth chapter has examined the effects of both level of interactivity and depth of information on the emotional states of pleasure and arousal, and the effects of these emotional states

upon A_{ST} and A_{ET}. However, the dependence relationships between these constructs, and their relative importance to one another, has not been investigated. Moreover, the relationship between A_{ST} and A_{ET} (Hypothesis Nine), and the effects of A_{ST} and A_{ET} on purchase consideration (Hypotheses Ten and Eleven) has not been examined. To address this deficiency, path analysis (using the Maximum Likelihood estimation procedure) will be used. Following suggestions made by Bentler (1990), the overall 'fit' of the conceptual model will be assessed using the goodness-of-fit index (GFI), the comparative fit index (CFI), and the root mean square residual (RMR).

While this study originally proposed that non-linear relationships would exist between some variables (e.g., a quadratic relationship between level of interactivity and pleasure), the results outlined in this chapter have indicated a linear relationship between all constructs examined. Thus, no data transformation was required for any of the variables included within the conceptual model. Additionally, two competing models are examined in this section. The first (Model 1), includes the two treatment conditions, which are entered into the model as independent and orthogonal (i.e., a correlation of zero) variables. The second model (Model 2), includes the measures of perceived level of interactivity and depth of information, where a covariance path is added between these two constructs.

The conceptual model produced a poor fit ($\chi^2 = 103.57$, $p = 0.00$), however the modification index highlighted a misspecification between pleasure and arousal. No causal relationship is assumed to exist between the two variables on theoretical grounds (e.g., Mehrabian and Russell 1974b; Russell 1980), although the results indicated that the error terms for pleasure and arousal were correlated with each other. Since a correlation between pleasure and arousal is not unexpected, the error

terms for both variables were allowed to correlate with each other in subsequent analyses (e.g., Sherman, Mathur, and Smith 1997; Wirtz and Bateson 1999). Given that pleasure and arousal represent the two dimensions of a consumer's emotional state, a correlation between the two error terms was further justified.

Model 1 (see Figure 5.5) exhibited excellent fit with the data (GFI = 0.99, CFI = 0.99, and RMR = 0.04). The χ^2/df ratio for Model 1 was 1.65, which also suggests a good fitting model (Tabachnick and Fidell 1996). However, the R^2 value for arousal was not significant ($p < .05$). Consequently, an alternate, optimised path model (Model 1a – see Figure 5.6) was tested, where the construct of arousal was removed from the analysis. Examination of the fit indices for Model 1a showed a small, but incremental improvement over the results obtained for Model 1 (GFI = 0.99, CFI = 1.00, RMR = 0.03, and χ^2/df ratio = 1.29). Differences between the χ^2 values also indicated that Model 1a fitted the data significantly better than Model 1 ($\Delta\chi^2 = 4.60$, $df = 1, p < 0.05$).

Model 2 (see Figure 5.7) initially showed sub-optimal fit. Analysis of the modification index led to the addition of four paths to the model. Additionally, to further optimise the model, two non-significant ($p < .05$) paths: perceived depth of information to arousal, and arousal to A_{ET} were deleted. Once these modifications were performed, the model also showed very good fit with the data collected (GFI = 0.99, CFI = 1.00, RMR = 0.04, and χ^2/df ratio = 1.23). The results of these analyses are provided in Table 5.14.

All models helped confirm the earlier findings outlined in this chapter. The inclusion of perceived level of interactivity had a significant impact on both pleasure

and arousal in Model 2. Depth of information also played a lesser role in predicting pleasure and arousal. All models provided support for the relationship between A_{ST} and A_{ET} (Hypothesis Nine). Hypotheses Ten and Eleven were also supported, with significant paths leading from A_{ST} and A_{ET} to purchase consideration (PC) in all three models.

The removal of arousal from Model 1a suggests that arousal may not play much of a role when consumers evaluate a Web-based shopping environment. This suggestion is also supported by the poor performance of arousal when compared to the findings for pleasure outlined earlier in this chapter. Combined with the results for Model 2, it can be argued that Web-based shopping environments may provide a high pleasure – low arousal experience for consumers, where pleasure is the key variable in helping understand how consumers respond to online retail settings.

Overall, all three models provided an excellent level of fit with the data. The addition of four paths to Model 2 meant that it was not as parsimonious as Model 1 or 1a. Of the four paths added to Model 2, the first was the significant correlation ($r = 0.50$) between perceived level of interactivity and depth of information. Although not hypothesised, significant paths emerged between level of interactivity and both A_{ST} ($\beta = 0.13$) and A_{ET} ($\beta = 0.18$). Moreover, the path between depth of information and A_{ST} ($\beta = 0.13$) also emerged as significant. As stated, the structure of all three models reinforced the importance of pleasure in mediating individuals' responses to the interfaces provided by Web-based shopping environments.

Standardised Regression Weights	Estimates		
	Model 1	Model 1a	Model 2
pleasure <-------- int	0.182	0.182	0.553
pleasure <-------- dep	0.116	0.116	0.167
pleasure <-------- e1	0.976	0.976	0.757
arousal <--------- int	0.075	n/a	0.342
arousal <--------- dep	0.057	n/a	n/a
arousal <--------- e2	0.995	n/a	0.939
ast <------------- int	n/a	n/a	0.133
ast <------------- dep	n/a	n/a	0.132
ast <------------- pleasure	0.676	0.726	0.534
ast <------------- arousal	0.105	n/a	0.104
ast <------------- e3	0.681	0.687	0.657
aet <------------- int	n/a	n/a	0.179
aet <------------- pleasure	0.326	0.328	0.245
aet <------------- arousal	0.005	n/a	n/a
aet <------------- e4	0.594	0.594	0.579
aet <------------- ast	0.533	0.534	0.491
pc <-------------- ast	0.254	0.254	0.254
pc <-------------- aet	0.370	0.370	0.370
pc <-------------- e5	0.808	0.808	0.808
Correlations			
int <------------> dep	0.000	0.000	0.496
e1 <------------> e2	0.468	n/a	0.360
Squared Multiple Correlations (R^2)			
Pleasure	0.047	0.047	0.426
Arousal	0.009	n/a	0.117
Attitude toward the Site	0.536	0.527	0.568
Attitude toward the E-tailer	0.646	0.646	0.664
Purchase Consideration	0.347	0.347	0.346
Goodness-of-Fit Indicators			
χ^2	14.884	10.281	8.575
df	9	8	7
p	0.094	0.246	0.285
GFI	0.988	0.990	0.993
CFI	0.993	0.997	0.999
RMR	0.042	0.029	0.042

Table 5.14 – Path Analysis (Comparative Results of Model 1, 1a, and 2)

GFI = 0.99
CFI = 0.99
RMR = 0.04

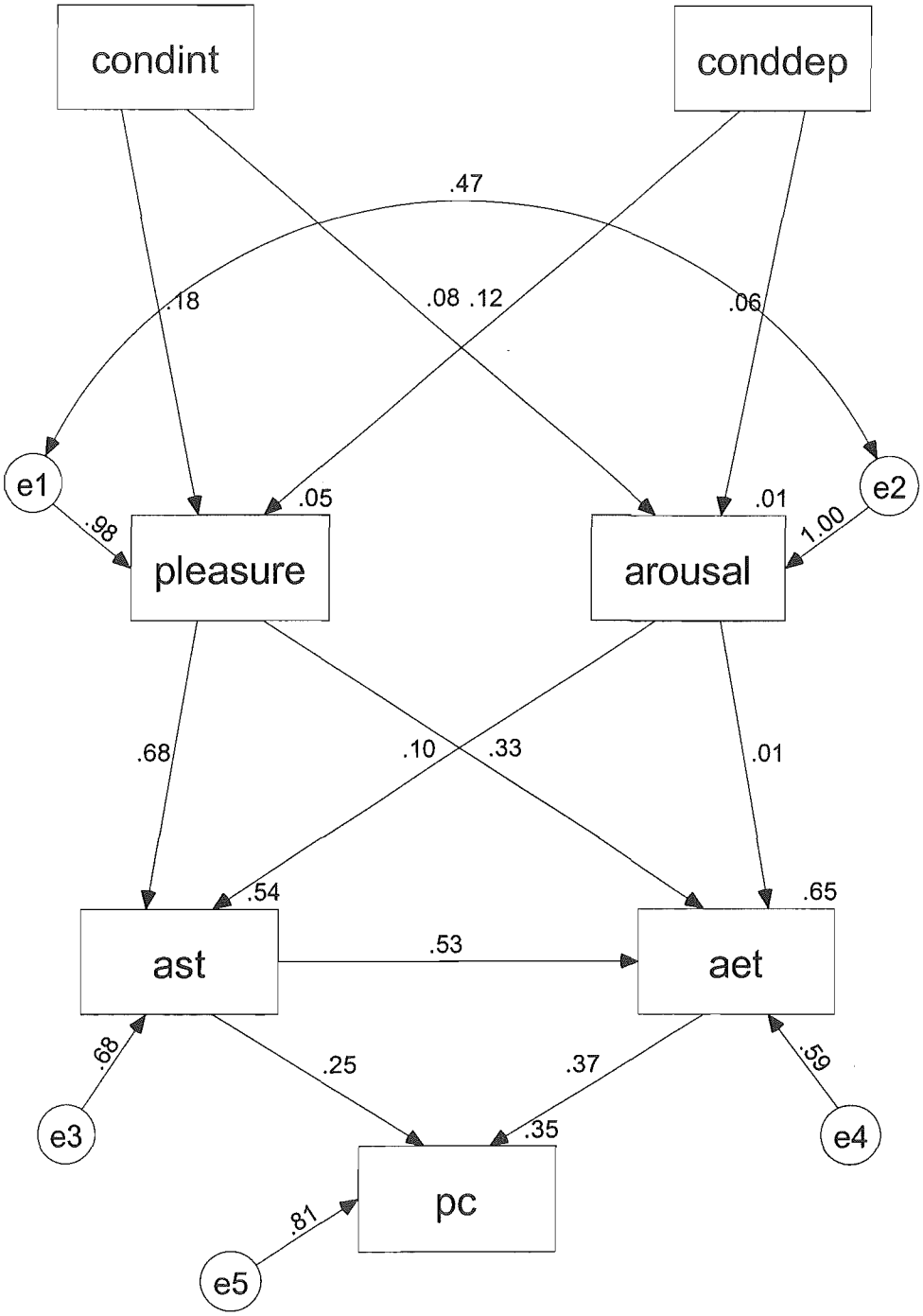

Figure 5.5 – Proposed Conceptual Model Using Treatment Conditions

GFI = 0.99
CFI = 0.99
RMR = 0.03

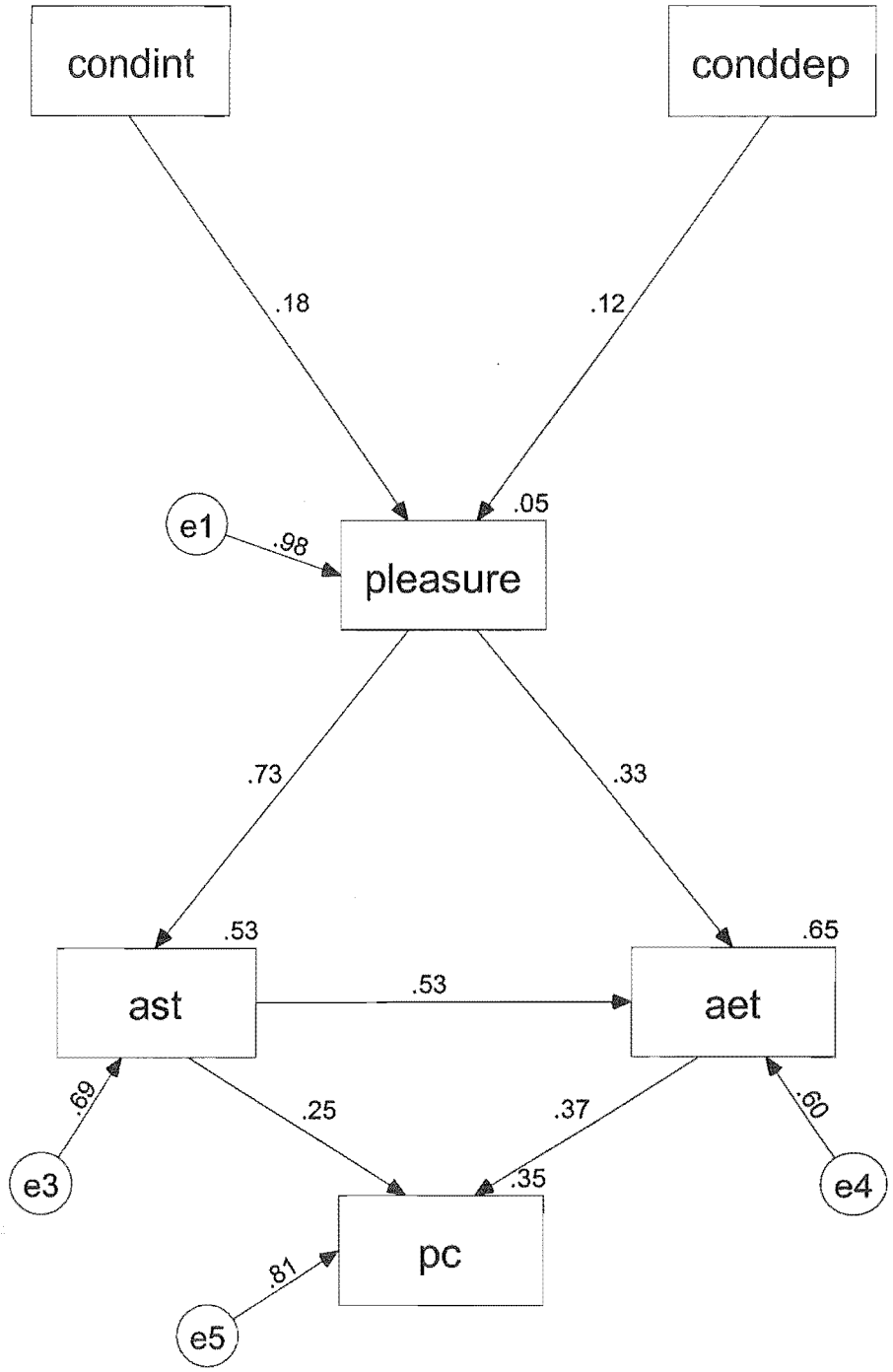

Figure 5.6 – Optimised Conceptual Model Using Treatment Conditions

GFI = 0.99
CFI = 0.99
RMR = 0.04

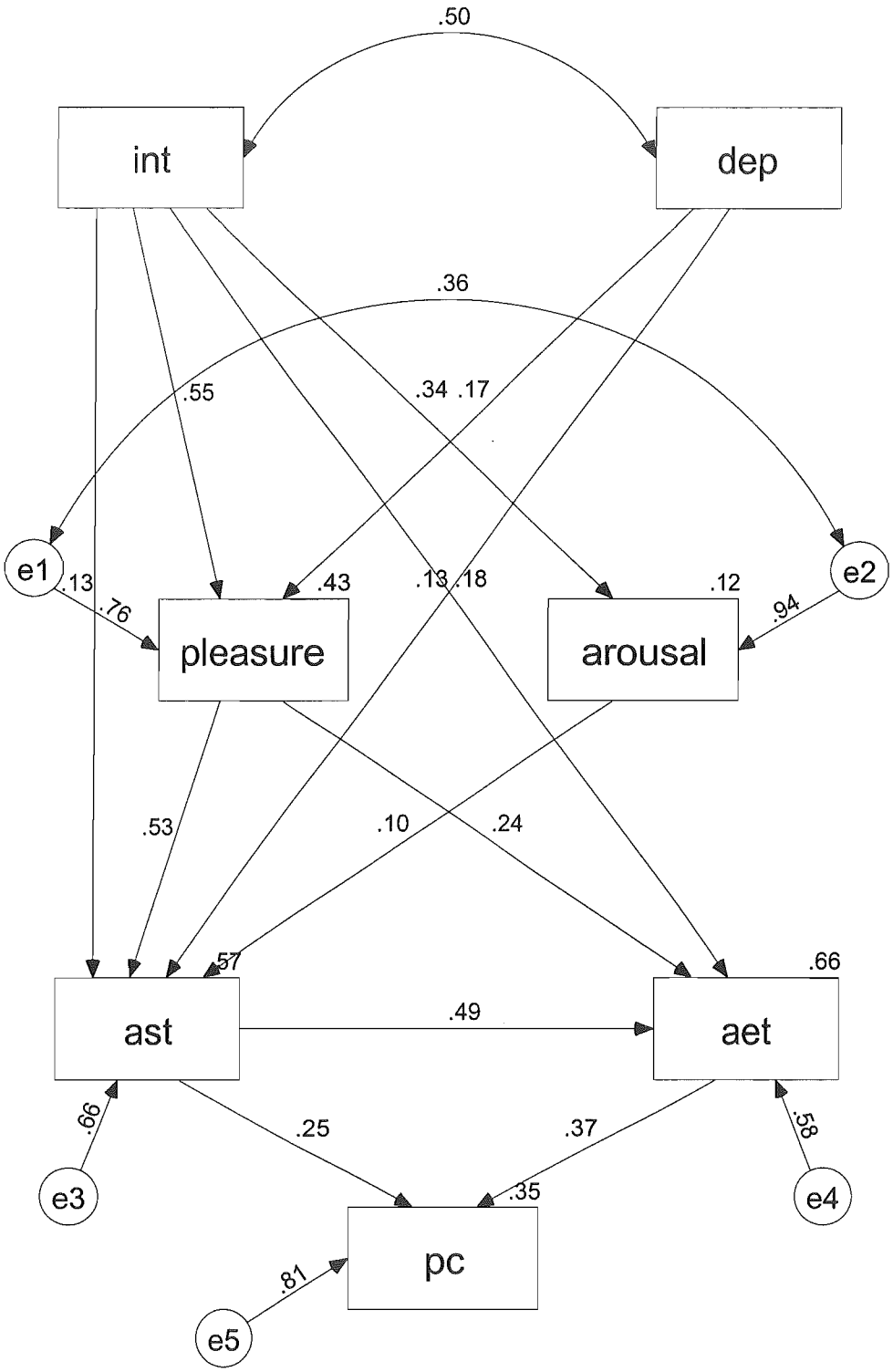

Figure 5.7 – Optimised Conceptual Model Using Perceived Treatments

5.8 CHAPTER SUMMARY

The main purpose of this chapter was to examine each of the eleven research hypotheses that were discussed in Chapter Three. The findings of this chapter can be summarised as follows, although a full discussion of these results will be provided in Chapter Six.

The first four hypotheses were related to the effects of level of interactivity and depth of information on the emotional states of pleasure and arousal. Level of interactivity was hypothesised to have an inverted-U like relationship with pleasure. However, analysis revealed only a linear relationship between the two variables, and *Hypothesis One was rejected.* Level of interactivity was also hypothesised to have a positive relationship with arousal. Although *Hypothesis Two was not supported,* a significant positive relationship between the two variables emerged using perceived level of interactivity as a predictor. Similar relationships were also hypothesised between depth of information and pleasure and arousal. Evidence of a linear (instead of quadratic) relationship between depth of information and pleasure meant that *Hypothesis Three was rejected.* Additionally, no evidence of a positive relationship between depth of information and arousal was found, and *Hypothesis Four was also rejected.*

Hypotheses Five to Eight were concerned with the relationship between both pleasure and arousal, and the response variables of A_{ST} and A_{ET}. The hypothesised relationships between pleasure and A_{ST}, and pleasure and A_{ET} were both found to be significant, and *Hypotheses Five and Seven were supported.* However, poor support was found for the conditional pleasure-arousal interaction hypothesis in predicting both A_{ST} and A_{ET}, and *Hypotheses Six and Eight were rejected.*

The proposed relationship between A_{ST} and A_{ET} emerged as significant, and *Hypothesis Nine was supported.* Finally, significant positive relationships between both A_{ST} and A_{ET} on purchase consideration were found, and *Hypotheses Ten and Eleven were also supported.*

CHAPTER SIX:

DISCUSSION

6.1 INTRODUCTION

This chapter will discuss the major findings of this research, the implications arising from these findings, the limitations of this research, and directions for future research in the study of emotion and Web-based shopping environments.

6.2 MAJOR RESEARCH FINDINGS

6.2.1 Summary of Research Purpose

The role of emotion when consumers interact with the interfaces provided by Web-based shopping environments has been an area where little research activity has occurred. To address this deficiency, this study drew theoretical guidance from the M-R environmental psychology framework (Mehrabian and Russell 1974b) to help understand this new research area. The conceptual model that was developed by adopting this framework proposed that two elements of a Web-based shopping environment (level of interactivity and depth of information) would influence the two emotional states of pleasure and arousal, and that these affective dimensions would subsequently influence consumers' attitudes and behavioural intentions. The dependence relationships hypothesised in this conceptual model were tested through an online experiment conducted via the World Wide Web.

6.2.2 Effects of Independent Variables on Pleasure and Arousal

Building upon the concept of information rate, this study proposed that two attributes associated with online shopping environments would have an effect on the emotional states of pleasure and arousal. These variables included: (1) the level of

interactivity, and (2) the depth of information provided by a Web-based shopping environment.

It was hypothesised that the level of interactivity and depth of information provided by a Web-based shopping environment would have an inverted-U like relationship with the emotional state of pleasure. That is, too little or too much website interactivity or information about product related attributes was expected to have a detrimental effect on reported pleasure, while an optimal level was assumed to exist for both variables. However, the results of an ANCOVA analysis failed to support these assertions.

Instead, a linear relationship was found between both independent variables and pleasure. Thus, as the level of interactivity provided by a Web-based shopping environment increased, the higher reported pleasure was. Similarly, the greater the number of attributes provided on a per-product basis, the higher reported pleasure was found to be. While not hypothesised, these results are perhaps not unexpected. For example, Russell and Snodgrass (1987) stated that while an inverted-U like relationship usually exists between complexity and pleasure, there have been many instances in the literature where a linear relationship has been found instead.

While an inverted-U like relationship was hypothesised between the level of interactivity and depth of information provided by an online shopping environment and pleasure, a linear relationship was predicted between these two variables and the emotional state of arousal. However, results of the ANCOVA analysis (which used the experimental conditions as grouping variables) failed to support these assertions. Contrary to expectations, reported arousal was found to be similar at all levels of

each experimental condition. Moreover, the arousal ratings given to each level of the experimental conditions was negative. Given that the pleasure ratings given to each level of the experimental conditions was positive (and increased incrementally), it can be argued that Web-based shopping environments provide a high pleasure-low arousal experience to consumers. The implications of these findings are discussed in Section 6.3.

Additional to these main research findings, three other findings were of some interest. First, using the single satisfaction/dissatisfaction scale item derived from the multi-item construct of pleasure, it was found that this single scale item arguably provides a more parsimonious measure of pleasure for use in online retail settings. Second, while level of interactivity was not found to positively predict arousal as a result of the experimental manipulations, perceived level of interactivity was a positive predictor of arousal. Third, of the two independent variables investigated, the perceived level of interactivity provided by a Web-based shopping environment was shown to be a much better predictor of pleasure and arousal, as opposed to the perceived depth of information provided.

6.2.3 Effects of Pleasure and Arousal on A_{ST} and A_{ET}

The second set of research hypotheses outlined in this study were concerned with the effects of both pleasure and arousal on A_{ST} and A_{ET}. Building upon the work of Mehrabian and Russell (1974b), a conditional pleasure-arousal interaction was hypothesised in the prediction of A_{ST} and A_{ET}. Thus, in pleasant Web-based shopping environments, arousal was predicted to be positively related to A_{ST} and A_{ET}, while in unpleasant environments, arousal was predicted to be negatively related to the two variables.

To address these hypotheses, this study adopted the methodological approach taken by Donovan and Rossiter (1982) and Donovan et al. (1994). However, similar to the findings of these two studies, and consistent with the earlier findings outlined in Section 6.2.2, a small number (21%) of subjects in this study rated the Web-based shopping environments provided by the experimental website as being unpleasant. Moreover, only poor support was provided for the two conditional pleasure-arousal interaction hypotheses. Specifically, in both pleasant and unpleasant Web-based shopping environments, when arousal was found to be a significant predictor of A_{ST} or A_{ET}, the direction of the relationship was always positive, rather than the negative direction that was hypothesised in unpleasant environments.

While weak support emerged for the conditional pleasure-arousal interaction hypotheses, strong support was found for the hypotheses that the emotional state of pleasure would be a significant positive predictor of both A_{ST} and A_{ET}. Therefore, it was found that as pleasure increased as a result of using a Web-based shopping environment, so did subjects' overall attitude toward the website they were using. Similarly, as pleasure increased, so did subjects' attitude toward the online retailer whose website they were navigating.

Additional analyses were also undertaken to examine the relative effects of pleasure and arousal on A_{ST} and A_{ET}. Results of the three-stage regression analyses provided evidence that pleasure was a much better predictor of A_{ST} and A_{ET} than arousal. The importance of pleasure in understanding how consumers evaluate a Web-based shopping environment will be discussed later in this chapter.

6.2.4 Path Analysis of the Full Conceptual Model

The relationship between A_{ST} and A_{ET}, and the effects of these two variables upon purchase consideration were examined using path analysis. Furthermore, path analysis was also used to simultaneously examine all the dependence relationships outlined in the conceptual model. As hypothesised, a significant positive relationship was found between A_{ST} and A_{ET}. Moreover, significant positive relationships were established between these two variables and purchase consideration. Thus, attitude transference was found to occur between a positive evaluation of a website to the online retailer operating that website. Additionally, both attitudinal measures were able to predict the likelihood a consumer would consider making a purchase from an online retailer in the future.

The results of the two path analyses helped confirm the results found earlier in this study. Specifically, level of interactivity was found to be a better predictor of pleasure and arousal than depth of information. Additionally, when compared with arousal, the emotional state of pleasure was a much better predictor of A_{ST} and A_{ET}. Based on the second competing path model, non-hypothesised relationships were also established between perceived level of interactivity and both A_{ST} and A_{ET}, and perceived depth of information and A_{ST}.

6.2.5 Effects of Covariate Variables

Finally, two covariate variables (Involvement and Need for Cognition) were used in this study. The overall effect of involvement was small, while the effect of Need for Cognition was non-existent, and did not reach statistical significance for any of the tests this construct was included. In all instances, involvement exhibited a small amplification effect. Thus, those subjects who were more involved with the

product category of digital cameras evaluated the website more favourably (in terms of both pleasure and arousal) than those respondents with less enduring involvement with digital cameras.

6.3 RESEARCH IMPLICATIONS

Based upon the findings of this research, several managerial and theoretical implications can be drawn. These implications will be outlined in the following two sub-sections.

6.3.1 Managerial Implications

The first managerial implication is based upon the non-hypothesised linear relationship of both level of interactivity and depth of information with pleasure. The discussion of the conceptual model provided in Chapter Three suggested that an optimal level of these two variables should occur, where either too little or too much interactivity or product attribute information would have a detrimental effect upon a consumer's evaluation of a Web-based shopping environment. The finding of a linear (instead of quadratic relationship) between the two independent variables and pleasure suggests that online retailers should attempt to maximise the interactive features and product-related information provided on their website. Although this assertion needs to be further examined in future research, it appears that information overload should not be a critical concern to online retailers.

Extending this idea, the next managerial implication is based on the finding that perceived level of interactivity was a better predictor of pleasure and arousal than perceived depth of information. Thus, extending the implications drawn in the previous paragraph, while online retailers should attempt to maximise the interactive

features and product-related information provided on their website, special emphasis should be given to increasing the level of interactivity provided. This idea supports the findings of Marmorstein, Grewal, and Fishe (1992), that increased control of the shopping experience is associated with increased consumer pleasure. To this end, greater control of the navigational experience while using a Web-based shopping environment may increase consumers' satisfaction with an online retailer.

The overall dominance of pleasure in predicting the two attitudinal measures (A_{ST} and A_{ET}) included in this study provides the final implication of this research. While this study has examined the impact of two variables (level of interactivity and depth of information) on the emotional states of pleasure and arousal, pleasure was found to be a better predictor of the two attitudinal measures included in this study. Given the interrelationship between A_{ST} and A_{ET}, and the critical role of these two variables upon purchase consideration, it becomes essential for online retailers to consider what aspects of a Web-based shopping environment enhance the pleasure experienced by consumers navigating their website. Although this study found that level of interactivity was a better predictor of pleasure than depth of information, there may be other components of a retail website that also tap into this affective dimension. This implication is reinforced by the small effect of arousal found in this study, thus suggesting that Web-based shopping environments should be considered a high pleasure – low arousal experience for consumers.

6.3.2 Theoretical Implications

Based upon the results presented in this research, a number of theoretical implications can also be drawn. On the whole, these implications are a result of the non-hypothesised relationships found to occur between the constructs included in

the conceptual model examined in this study. The finding of a linear relationship between both independent variables and the emotional state of pleasure has some important implications for future research activity applying the M-R framework to computer-mediated environments, such as those provided by the interfaces used in Web-based retail settings. Specifically, while the finding of a linear relationship between both independent variables and pleasure is contrary to the theory that was outlined in this study, it is possible that such a relationship is more likely to exist in Web-based shopping environments, or that other variables may help moderate this relationship. For example, factors such as whether consumers are interacting with an online shopping environment by exhibiting either experiential or goal-directed behaviours (e.g., Hoffman and Novak 1997) may impact upon the nature of the relationship between both level of interactivity and depth of information, and the emotional state of pleasure.

Similarly, the absence of a relationship between both independent variables and the emotional state of arousal raises questions about the applicability of this construct for use in the study of Web-based shopping environments. While further research is required to examine the validity of this construct for use in computer-mediated settings, it is possible that this emotional state may have little utility in helping understand consumer behaviour in Web-based shopping environments. Moreover, it is possible that the virtual environments provided by Web-based retail settings have limited ability to evoke arousal in consumers. Given that the majority of subjects participating in this study were also experienced users of the Web, it is also possible that the ability for Web-based shopping environments to evoke arousal in consumers is dependent upon the previous level of experience an individual has with online shopping environments. However, due to the exploratory nature of this

study, such assertions need to be confirmed in future research efforts applying the M-R framework to online shopping environments.

Finally, the finding that the single satisfaction/dissatisfaction scale item used in this study produced results similar to those provided by the composite six-item measure of pleasure provides another result of theoretical importance. Specifically, the results presented in this study suggested that the six scale items for pleasure were able to be collapsed into a single scale using satisfied-unsatisfied as scale anchors. Given the importance of the role of satisfaction in providing a positive shopping experience for consumers (e.g., Glazer 1991), and that both independent variables examined in this study have been shown to positively predict satisfaction with a Web-based shopping environment, this research provides some guidance as to what aspects of an online shopping interface provide a satisfying experience for consumers.

6.4 LIMITATIONS OF THIS RESEARCH

Seven main research limitations were evident within this study. The first of these was related to the fictitious DigiCams Online website that was employed in the online experiment. Specifically, many of the features that subjects would normally expect to find in a real-world website were not able to be replicated in this study. In part, this was due to the lack of software and hardware to develop a fully functional website. However, the need to maintain control of subjects progression through the experiment also made the lack of a fully functional website desirable. Regardless, for some of the interactive features of the website (e.g., the product search engine, or the ability to participate in a discussion forum), subjects were only exposed to a web page providing a description of the feature they tried to activate. As such, the

effect of this limited website functionality on the dependent variables examined in this study is unknown.

The second limitation relates to the issue of selection bias limiting the extent to which the results of this study can be generalised. For the purpose of this study, participants were recruited through announcements made to USENET newsgroups, mailing lists, and Web-based discussion boards. Thus, only online respondents were able to participate in this study, and self-selection bias may limit the generalisability of the findings presented. As a result, care must be taken extrapolating the findings presented in this study to the entire population of Web users.

Extending this idea, the regional nature of the sample used in this study also limits the extent to which the results presented in this thesis can be generalised, and thus provides the third limitation. As stated in the methodology section, due to the regional nature of digital camera retailing (e.g., different voltage requirements and models between countries), the sample for this study consisted of Web users from Australia and New Zealand only. Accordingly, it is unknown whether the findings reported in this thesis would be applicable to Web users from other regions of the world.

The fourth limitation is related to the "one-shot" nature of the experimental design employed in this study. Specifically, respondents typically took part in this study over a short timeframe (approximately 10 minutes). Thus, repeat visits to the experimental website may have produced a maturation effect, where respondents would be able to provide a more accurate evaluation of the site. For example, in the high level of interactivity condition, subjects may have required multiple exposures

before becoming fully accustomed to the website, and the navigation opportunities available.

The use of a single retail website provides the fifth limitation of this study. For the purpose of this research, the experimental website created was a fictitious online retailer for digital cameras. However, it is possible that different results may have been found for different types of retailers (e.g., supermarkets, bookstores, etc.). Consequently, care should be taken in generalising the results of this study to all types of Web-based retailers. Replication of the conceptual model presented in this study to different types of online retailers is required to validate the findings of this research.

Some of the scales used in this study were not originally developed for use in a Web setting, therefore providing the sixth limitation of this study. In particular, the scales for pleasure and arousal were originally developed for use within a real-world *physical* environment. Although these measures have been applied in contexts such as advertising, their applicability to research in computer-mediated environments is unknown. Even though these scales were found to be reliable, further work must be done to properly assess their suitability for research concerning Web-based shopping environments.

The final limitation is related to the measurement of behavioural intentions rather than actual behaviour. Specifically, it is not known how the characteristics of a real Web-based shopping environment would affect the observable behaviour of a consumer. For example, while the measures of A_{ST} and A_{ET} were found to influence purchase consideration, it remains unknown how these attitudinal measures would

affect the actual shopping behaviour of an individual when interacting with a Web-based shopping environment. As a result, caution should be taken in extending the results presented in this study to attempting to predict actual shopping behaviour in an online retail website.

6.5 FUTURE RESEARCH DIRECTIONS

Building upon the results presented, three main directions for future research concerning the study of emotion and Web-based shopping environments have been identified by the author. These future research directions will now be discussed in turn.

Many of the issues identified in the limitations section of this chapter provide initial direction for future research. For example, applying the conceptual model used within this thesis to a fully functional or real-world website would allow the generalisability of the results presented in this study to be examined. Additionally, replication of this study to other regions of the world would allow the cross-cultural generalisability of this research to be assessed. Furthermore, replicating this study to other types of online retailers (and other product categories), and also extending the model used in this study to include actual purchasing behaviour are fruitful areas for future research.

Although the two M-R emotional states of pleasure and arousal were used in this study, the application of other emotional typologies to research efforts on Web-based shopping environments provides the second key direction for future research. For example, while authors (e.g., Havlena and Holbrook 1986; Machleit and Eroglu 2000) have supported the use of the M-R dimensions, other emotional typologies

(e.g., Izard 1977; Plutchik 1980) have also been found to be suitable for research in consumer behaviour settings. Moreover, these alternate typologies all tap into some discrete emotional dimensions not directly measured by the M-R framework. Thus, future research could further examine what other affective states are evoked when consumers interact with Web-based shopping environments.

The issue of what other aspects of a Web-based shopping environment evoke emotional responses in consumers provides the final direction for future research. In this study, and building upon the concept of information rate, the two independent variables of level of interactivity and depth of information were posited to affect the emotional states of pleasure and arousal. However, when navigating a Web-based shopping environment (or even websites in general), there are several features that could be included on a web page that may evoke some degree of affective response. Consequently, future research should attempt to uncover what other features found in a website elicit emotion in consumers, and what effect these affective responses have on the behaviour of consumers when interacting with a Web-based shopping environment.

While these ideas provide some direction for future research regarding the study of emotion and Web-based shopping environments, a specific research agenda building upon the results presented in this research is as follows. First, and based on the non-hypothesised results for pleasure and arousal found in this thesis, this study should be replicated and/or extended to ascertain the actual effects of level of interactivity and depth of information upon the two emotional states of pleasure and arousal. Such a strategy would also allow future research to determine whether the hypothesised conditional pleasure-arousal interaction exists in Web-based shopping

environments. Second, although the M-R framework used in this study has proven somewhat successful in helping understand consumer behaviour in online retail settings, it is possible that the addition of other variables to the M-R framework may help further understand consumer behaviour in this new medium. For example, the inclusion of Csikszentmihalyi's (1977) construct of 'flow', or the specific inclusion of involvement (e.g., Zaichkowsky 1985; 1986) into a modified version of the M-R framework may help further our understanding of the mediating role of emotions in Web-based shopping environments. From here, and once the applicability of the M-R framework to online retail settings has been further investigated, many of the other opportunities for future research identified within this section (e.g., the use of other emotional typologies) should be explored.

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APPENDICES

APPENDIX ONE:

Online Experiment – Introductory Web Pages

ONLINE QUESTIONNAIRE

Web Site Evaluation Survey

Welcome to...

Web-L@b

A Consumer Research Project

An academic research site at the
Department of Management, University of Canterbury, New Zealand

---

Thank you for accessing our Online Survey Questionnaire

- **TWO Vodafone Prepay Mobile Phones (Worth $159)** will be awarded to randomly selected participants at the end of the survey period. This prize draw will be conducted by Don McNickle (HOD, Department of Management, University of Canterbury).
- The information gathered here is **confidential** and will only be used for **academic research purposes.**
- If you experience any difficulties with this form, please contact the: **survey administrator**
- Survey time is approximately **10 minutes.**
- Browser Requirements: Netscape 3.0 and above or Internet Explorer. **JavaScript must be ENABLED. Please make sure that your "Load Images" function is ON.**

If you wish, you may preview the consent form before you begin.

Click to Proceed!

Participant Consent Form

Highlights:

- You must be at least 18 years old
- Your responses will remain confidential
- You are free to quit this study at any time

 Click to Proceed!

Full Details:

Dear Participant, you have been asked to take part in the research project described below and we thank you for visiting our website. If you have any questions, please feel free to e-mail Paul Ballantine or Dr David R. Fortin, the people mainly responsible for this study. The purpose of this study is to better understand the attitudes and opinions of people who use the World Wide Web. Responses to these items will be collected through fill-out forms that you will submit to us online but remain confidential. Should you wish to enter our prize draw, you will be asked to provide your e-mail address. However, this information will only ever be used to contact you should you be randomly selected as a prize winner.

You must be at least 18 years old to participate in this research project. If you decide to take part in this study, your participation will involve filling out an online survey pertaining to your attitudes about the World Wide Web. The possible risks or discomforts of the study are minimal. Although there are no direct benefits of the study, your answers will help increase the knowledge regarding people's attitudes and opinions about the World Wide Web. Your part in this study is confidential. That means that your answers to all questions are private. No one else can know if you participated in this study and no one else can find out what your answers were. Scientific reports be based on group data and will not identify you or any individual as being in this project.

The decision to participate in this research project is up to you. You do not have to participate and you can refuse to answer any question. Participation in this study is not expected to be harmful or injurious to you. However, if this study causes you any injury, you should e-mail Paul Ballantine or Dr David R. Fortin.

You are at least 18 years old. You have read the consent form and your questions have been answered to your satisfaction. Your filling out the survey implies your **consent** to participate in this study.

 Click to Proceed!

ONLINE QUESTIONNAIRE

INSTRUCTIONS

Read Carefully Before You Begin

Section 1:

- You will be asked to visit and evaluate a proposed shopping website for digital cameras which is under development. To improve readability, some of your browser's toolbars may temporarily not appear on your screen.

- You will find a similar link like the following one on the bottom of each page for your navigation through the site. You can spend as much time as you like on each page. When you are done, just click on the bottom link to proceed to the next page.

 Click to Proceed!

- The site you will be visiting is an experimental one and some of the features you will encounter are not yet fully operational. Do not let this influence your opinion about the site in general as we are mostly interested in your reaction to the format and content of the site at this stage of development.

Section 2:

- After browsing through the pages within the site, you will be able to provide your opinions on what you have just seen.

- To begin with the study, please use your mouse to click on the following link. Good luck.

 Click to Proceed!

APPENDIX TWO:

Online Experiment – Stimulus Material

CONDITION ONE:

Low Level of Interactivity x Low Depth of Information

DigiCams Online

Cameras:
Canon
Casio
Fuji
Kodak
Nikon
Olympus
Sony

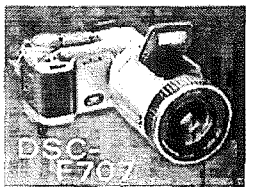
Accessories:
Adapters
Batteries and Chargers
Carry Cases
Lenses
Memory Cards
Other

Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

Coming Soon:
Sony CyberShot DSC-707

An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



Click to Proceed!

DigiCams Online

Welcome to our online catalog. All prices include GST.

Canon	Rec. Retail	Our Price
Canon PowerShot G1	$2,499.00	$2,299.00
Canon PowerShot G2	$2,799.00	$2,599.00
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00
Canon PowerShot IXUS 300	$1,799.00	$1,699.00
Canon PowerShot IXUS V	$1,549.00	$1,449.00
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00

Casio	Rec. Retail	Our Price
Casio LV-10	$399.00	$349.00
Casio QV-2400	$1,699.00	$1,499.00
Casio QV-3500	$2,299.00	$2,099.00

Fuji	Rec. Retail	Our Price
Fuji FinePix A101	$749.00	$699.00
Fuji FinePix A201	$899.00	$829.00
Fuji FinePix 1300	$899.00	$829.00
Fuji FinePix 2300	$1,236.00	$1,099.00
Fuji FinePix 2400 Zoom	$1,399.00	$1,269.00
Fuji FinePix 4800 Zoom	$2,199.00	$2,029.00
Fuji FinePix 4900 Zoom	$2,499.00	$2,299.00
Fuji FinePix 6800 Zoom	$2,699.00	$2,499.00
Fuji FinePix 6900 Zoom	$2,999.00	$2,649.00

Kodak	Rec. Retail	Our Price
Kodak DC3200	$599.00	$559.00
Kodak DX3500	$899.00	$829.00
Kodak DX3600 Zoom	$1,299.00	$1,149.00
Kodak DX3900 Zoom	$1,799.00	$1,619.00
Kodak DX5000 Zoom	$1,699.00	$1,529.00

Nikon	Rec. Retail	Our Price
Nikon CoolPix 775	$1,499.00	$1,349.00
Nikon CoolPix 995	$2,999.00	$2,699.00

Olympus	Rec. Retail	Our Price
Olympus Camedia C-1	$899.00	$829.00
Olympus Camedia C-960 Zoom	$1,199.00	$1,099.00
Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00

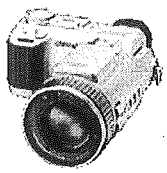
Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00

Sony	**Rec. Retail**	**Our Price**
Sony Mavica FD75	$1,299.00	$1,219.00
Sony Mavica FD87	$1,699.00	$1,579.00
Sony Mavica FD92	$1,999.00	$1,849.00
Sony Mavica CD200	$2,599.00	$2,459.00
Sony Mavica CD300	$3,299.00	$3,099.00
Sony CyberShot DSC-P20	$999.00	$929.00
Sony CyberShot DSC-P30	$1,199.00	$1,119.00
Sony CyberShot DSC-P50	$1,599.00	$1,499.00
Sony CyberShot DSC-S75	$2,399.00	$2,249.00
Sony CyberShot DSC-S85	$2,799.00	$2,629.00

Click to Proceed!

DigiCams Online

All prices include GST

NEW **Sony CyberShot DSC-707** RRP: $TBA **Our Price: $TBA** BUY IT	

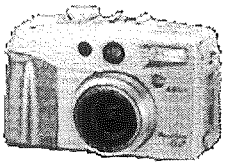
Specifications:

Camera	Sony CyberShot DSC-707 Digital Still Camera (5.24 megapixels)

Click to Proceed!

DigiCams Online

All prices inclusive GST

NEW Canon PowerShot G2 RRP: $2,799.00 **Our Price: $2,599.00** BUY IT	

Specifications:

Camera	Canon PowerShot G2 Digital Camera (3.8 megapixels)

Click to Proceed!

Thanks for viewing the DigiCams Online website!

Now, before filling out our questionnaire, here are some tips about shopping using the Internet

If you have a personal computer and an Internet connection, you can buy almost anything from anywhere in the world. Popular items include CD's, books, clothes, wine, food, flowers, and computer hardware and software.

If you ever have a problem with an Internet trader, visit eConsumer.gov. With this resource, you can file complaints about online transactions with a foreign company, get tips for safe shopping online, and get contact numbers for consumers agencies around the world.

This information from the New Zealand Ministry of Consumer Affairs

 **Click to Proceed!**

CONDITION TWO:

Low Level of Interactivity x Medium Depth of Information

DigiCams Online

Welcome to DigiCams Online! Whether you're just browsing or ready to place an order, we hope you visit our online store with 24/7 enjoyment.

Cameras:
Canon
Casio
Fuji
Kodak
Nikon
Olympus
Sony

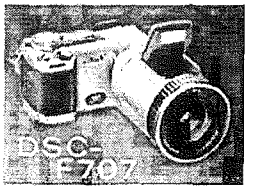
Accessories:
Adapters
Batteries and Chargers
Carry Cases
Lenses
Memory Cards
Other

Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

Coming Soon:
Sony CyberShot DSC-707

An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



Click to Proceed!

DigiCams Online

Welcome to our online Canon & Fuji price guide (inc GST)

Canon	Rec. Retail	Our Price
Canon PowerShot G1	$2,499.00	$2,299.00
Canon PowerShot G2	$2,799.00	$2,599.00
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00
Canon PowerShot IXUS 300	$1,799.00	$1,699.00
Canon PowerShot IXUS V	$1,549.00	$1,449.00
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00

Casio	Rec. Retail	Our Price
Casio LV-10	$399.00	$349.00
Casio QV-2400	$1,699.00	$1,499.00
Casio QV-3500	$2,299.00	$2,099.00

Fuji	Rec. Retail	Our Price
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Fuji FinePix 1300	$899.00	$829.00
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Fuji FinePix 2400 Zoom	$1,399.00	$1,269.00
Fuji FinePix 4800 Zoom	$2,199.00	$2,029.00
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Kodak	Rec. Retail	Our Price
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Sony	Rec. Retail	Our Price
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Sony Mavica FD92	$1,999.00	$1,849.00
Sony Mavica CD200	$2,599.00	$2,459.00
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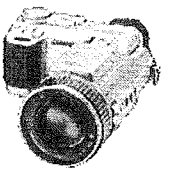
Sony CyberShot DSC-P50	$1,599.00	$1,499.00
Sony CyberShot DSC-S75	$2,399.00	$2,249.00
Sony CyberShot DSC-S85	$2,799.00	$2,629.00

Click to Proceed!

DigiCams Online

All prices are in USD

NEW! Sony CyberShot DSC-707 RRP: $TBA Our Price: $TBA BUY IT!	

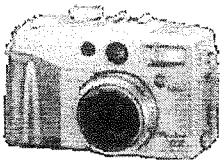
Specifications:

Image Formats	JPEG TIFF
Storage Media	Memory Stick
Connectivity	USB
Max Resolution	2,560 x 1,920 (5.24 megapixels)
Lower Resolutions	2,560 x 1,712 2,048 x 1,536 1,280 x 960 640 x 480
Zoom	5 x Optical 10 x Digital
Quality Levels	Fine Standard
Video Out	Yes, selectable NTSC / PAL
Warranty	12 months
Box Includes	Sony CyberShot DSC-707 Digital Still Camera 16 MB Memory Stick InfoLithium NP-FM50 Battery AC-L10 Adapter/Charger Lens cap Shoulder Strap USB Cable A/V Cable Instruction Manual CD-ROM: Sony USB Drivers, MGI PhotoSuite, MGI VideoSuite

 **Click to Proceed!**

DigiCams Online

All prices inclusive GST

NEW Canon PowerShot G2	
RRP: $2,799.00	
Our Price: $2,599.00 BUY IT	

Specifications:

Image Formats	RAW JPEG (EXIF)
Storage Media	Compact Flash Type I or Type II (Microdrive Supported)
Connectivity	USB
Max Resolution	2,272 x 1,704 (3.8 megapixels)
Lower Resolutions	1,600 x 1,200 1,024 x 768 640 x 480
Zoom	3 x Optical 2 x or 4 x Digital
Quality Levels	Super-Fine Fine Normal
Video Out	Yes, selectable NTSC / PAL
Warranty	12 months
Box Includes	Canon PowerShot G2 Digital Camera 32 MB Compact Flash Type I Card BP-511 Lithium-Ion Battery CA-560 AC Adapter/Charger (110-240V) WL-D100 IR Remote Control Lens Cap and String Shoulder Strap USB Interface Cable AV Cable CD-ROM: USB / TWAIN Driver, Remote Capture, Adobe Photoshop 5.0LE User Manual

Click to Proceed!

CONDITION THREE:

Low Level of Interactivity x High Depth of Information

DigiCams Online

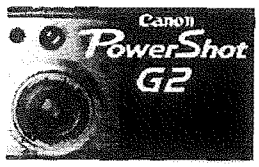
Welcome to DigiCams Online. Whether you are just browsing or planning to place an order, we hope you enjoy your online shopping experience with us.

Cameras:
Canon
Casio
Fuji
Kodak
Nikon
Olympus
Sony

Accessories:
Adapters
Batteries and Chargers
Carry Cases
Lenses
Memory Cards
Other

Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!



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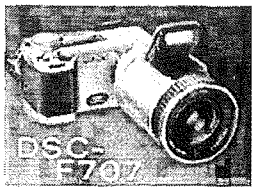
An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



Click to Proceed!

DigiCams Online

Welcome to our online catalog. All prices are in U.S.$

Canon	Rec. Retail	Our Price
Canon PowerShot G1	$2,499.00	$2,299.00
Canon PowerShot G2	$2,799.00	$2,599.00
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00
Canon PowerShot IXUS 300	$1,799.00	$1,699.00
Canon PowerShot IXUS V	$1,549.00	$1,449.00
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00

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Casio QV-2400	$1,699.00	$1,499.00
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Fuji FinePix 2400 Zoom	$1,399.00	$1,269.00
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Kodak DX3900 Zoom	$1,799.00	$1,619.00
Kodak DX5000 Zoom	$1,699.00	$1,529.00

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Olympus	Rec. Retail	Our Price
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Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00

Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00

Sony	**Rec. Retail**	**Our Price**
Sony Mavica FD75	$1,299.00	$1,219.00
Sony Mavica FD87	$1,699.00	$1,579.00
Sony Mavica FD92	$1,999.00	$1,849.00
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Sony CyberShot DSC-S75	$2,399.00	$2,249.00
Sony CyberShot DSC-S85	$2,799.00	$2,629.00

Click to Proceed!

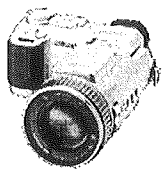
DigiCams Online

All prices include GST

NEW Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT



Specifications:

Image Formats	JPEG TIFF
Storage Media	Memory Stick
Connectivity	USB
Max Resolution	2,560 x 1,920 (5.24 megapixels)
Lower Resolutions	2,560 x 1,712 2,048 x 1,536 1,280 x 960 640 x 480
Image Ratio (w:h)	4:3 / 3:2
Zoom	5 x Optical 10 x Digital
Quality Levels	Fine Standard
Sensitivity Equiv.	Auto (ISO 100 - 320) ISO 100 ISO 200 ISO 400
Auto Focus	Contrast Detection 'Expanded' AF Hologram AF (automatic low light; laser)
Manual Focus	Via "focus by wire" ring at front of lens barrel
Normal Focus Range	50 cm (19.7 in) - Infinity
Macro Focus Range	2 cm (0.8 in) - 50 cm (19.7 in)
Min Shutter	Program AE: 1/30 sec Aperture Priority: 8 sec Manual / Shutter Priority: 30 sec
Max Shutter	1/1000 sec
Noise Reduction	Yes, for shutter speeds of 2.5 seconds or slower
Exposure Adjustment	-2EV to +2EV in 1/3EV steps
Exposure Modes	Program AE Aperture Priority Shutter Priority Full Manual Scene Mode: Twilight, Landscape, Portrait
Aperture Priority	Lens @ Wide: F2.0, F2.2, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.6, F6.3, F7.1, F8 Lens @ Tele: F2.4, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.6, F6.3, F7.1, F8
Shutter Priority	30*, 25*, 20*, 15*, 13*, 10*, 8*, 7*, 5*, 4*, 3*, 2.5*, 2, 1.6, 1.3, 1, 1/1.3, 1/1.6, 1/2, 1/2.5, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/13, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60, 1/80, 1/100, 1/125, 1/160, 1/200, 1/250, 1/320, 1/400, 1/500, 1/640, 1/800, 1/1000 sec * Indicated as 'NRx' where x is the shutter speed, noise reduction automatically enabled.
Metering	Multi-pattern (49 segment) Center-Weighted Average Spot
White Balance	Auto Manual Preset (custom)

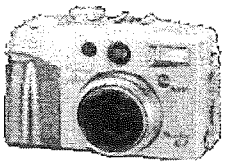
	Daylight Incandescent
Continuous	Approx. 2.8 fps for 3 images
Movie Clip	MPEG HQ: 320 x 240, 16 fps, max 15 seconds (including audio) MPEG EX: 320 x 240, 8 fps, limited only by storage space (including audio) MPEG EX: 160 x 112, 8 fps, limited only by storage space (including audio)
Built-in Flash	Yes, automatic pop-up
Flash Range	ISO 100: 0.5 - 5 m (1.6 - 16.4 ft)
Flash Modes	Auto Anti Red-Eye Auto Flash On Flash Off
Flash Compensation	Low Normal High
Self-timer	Yes, 10 sec delay
Video Out	Yes, selectable NTSC / PAL
Viewfinder	Electronic Viewfinder with dioptre adjustment, 180,000 pixels
LCD	1.8" TFT 123,000 pixels
Body Material	Magnesium Alloy
Weight (inc. battery)	667 g (1.5 lb)
Dimensions (inc. grip)	120 x 67 x 148 mm (4.7 x 2.6 x 5.8 in)
Warranty	12 months
Box Includes	Sony CyberShot DSC-707 Digital Still Camera 16 MB Memory Stick InfoLithium NP-FM50 Battery AC-L10 Adapter/Charger Lens cap Shoulder Strap USB Cable A/V Cable Instruction Manual CD-ROM: Sony USB Drivers, MGI PhotoSuite, MGI VideoSuite

Click to Proceed!

NEW Canon PowerShot G2

RRP: $2,799.00

Our Price: $2,599.00 BUY IT



Specifications:

Image Formats	RAW JPEG (EXIF)
Storage Media	Compact Flash Type I or Type II (Microdrive Supported)
Connectivity	USB
Max Resolution	2,272 x 1,704 (3.8 megapixels)
Lower Resolutions	1,600 x 1,200 1,024 x 768 640 x 480
Image Ratio (w:h)	4:3
Zoom	3 x Optical 2 x or 4 x Digital
Quality Levels	Super-Fine Fine Normal
Sensitivity Equiv.	Auto (ISO 50 - 100) ISO 50 ISO 100 ISO 200 ISO 400
Auto Focus	Contrast Detection Continuous or Single AF 3 Selectable Focus Points
Manual Focus	6 cm (Wide) / 20 cm (Tele) - Infinity
Normal Focus Range	70 cm (27.6 in) - Infinity
Macro Focus Range	6 cm (2.4 in) - 70 cm (27.6 in)
Min Shutter	Auto: 1/8 sec Program / Aperture Priority: 1 sec Shutter Priority / Manual: 15 sec
Max Shutter	1/1000 sec
Noise Reduction	Yes, for shutter speeds of 1.3 seconds or slower
Exposure Adjustment	-2EV to +2EV in 1/3EV steps
Exposure Modes	Auto Creative: Program AE, Shutter Priority, Aperture Priority, Manual Image Control: Pan-Focus, Portrait, Landscape, Night Scene, Colour Effects, Stitch Movie
Aperture Priority	Lens @ Wide: F2.0, F2.2, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.0, F5.6, F6.3, F7.1, F8.0 Lens @ Tele: F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.0, F5.6, F6.3, F7.1, F8.0
Shutter Priority	15, 13, 10, 8, 6, 5, 4, 3.2, 2.5, 2, 1.6, 1.3, 1, 0.8, 0.6, 0.5, 0.4, 0.3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/13, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60, 1/80, 1/100, 1/125, 1/160, 1/200, 1/250, 1/320, 1/400, 1/500, 1/640, 1/800, 1/1000
Metering	Evaluative Center-Weighted Average Spot (can be tied to selected focus point)

White Balance	Auto Daylight Cloudy Tungsten Fluorescent Fluorescent High Flash Custom Preset (Manual)
Continuous	High speed: 2.5 fps, max 5 images Normal: 1.5 fps, max 9 images (Large / Fine, LCD switched off)
Movie Clip	320 x 240, 15 fps, max 30 secs (including audio) 160 x 120, 15 fps, max 120 secs (including audio)
Built-in Flash	Yes, fixed internal
Flash Range	Wide: 0.7 - 4.5 m (2.3 - 14.8 ft) Tele: 0.7 - 3.6 m (2.3 - 11.8 ft)
Flash Modes	Auto Red-Eye Reduction Auto Red-Eye Reduction Flash On Flash Off
Flash Compensation	+/-2 EV in 0.3 EV steps
Self-timer	Yes, 10 sec delay
Video Out	Yes, selectable NTSC / PAL
Viewfinder	Optical with dioptre adjustment, approx. 84% frame coverage
LCD	1.8" TFT flip-out and twist, approx. 100% frame coverage
Body Material	Front magnesium alloy, back high-impact plastic
Weight (inc. battery)	510 g (1.1 lb)
Dimensions (inc. grip)	121 x 77 x 64 mm (4.8 x 3.0 x 2.5 in)
Warranty	12 months
Box Includes	Canon PowerShot G2 Digital Camera 32 MB Compact Flash Type I Card BP-511 Lithium-Ion Battery CA-560 AC Adapter/Charger (110-240V) WL-D100 IR Remote Control Lens Cap and String Shoulder Strap USB Interface Cable AV Cable CD-ROM: USB / TWAIN Driver, Remote Capture, Adobe Photoshop 5.0LE User Manual

CONDITION FOUR:

Medium Level of Interactivity x Low Depth of Information

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Welcome to DigiCams Online. We understand that purchasing a digital camera can be a confusing process. Browse our online store with confidence. If you have any comments please contact us

Cameras:
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Fuji
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Nikon
Olympus
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Carry Cases
Lenses
Memory Cards
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Camera Reviews
Digital Camera News
Frequent Questions

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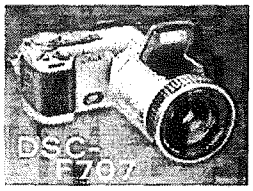
Contact Information

Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

Coming Soon:
Sony CyberShot DSC-707

An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



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DigiCams Online

We Carry All Canon Digital Cameras. If you are looking for a particular model that is not listed, please **contact us**. All prices include USA shipping.

Canon	Rec. Retail	Our Price	
Canon PowerShot G1	$2,499.00	$2,299.00	BUY IT
Canon PowerShot G2	$2,799.00	$2,599.00	BUY IT
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00	BUY IT
Canon PowerShot IXUS 300	$1,799.00	$1,699.00	BUY IT
Canon PowerShot IXUS V	$1,549.00	$1,449.00	BUY IT
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00	BUY IT

Casio	Rec. Retail	Our Price	
Casio LV-10	$399.00	$349.00	BUY IT
Casio QV-2400	$1,699.00	$1,499.00	BUY IT
Casio QV-3500	$2,299.00	$2,099.00	BUY IT

Fuji	Rec. Retail	Our Price	
Fuji FinePix A101	$749.00	$699.00	BUY IT
Fuji FinePix A201	$899.00	$829.00	BUY IT
Fuji FinePix 1300	$899.00	$829.00	BUY IT
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Fuji FinePix 4800 Zoom	$2,199.00	$2,029.00	BUY IT
Fuji FinePix 4900 Zoom	$2,499.00	$2,299.00	BUY IT
Fuji FinePix 6800 Zoom	$2,699.00	$2,499.00	BUY IT
Fuji FinePix 6900 Zoom	$2,999.00	$2,649.00	BUY IT

Kodak	Rec. Retail	Our Price	
Kodak DC3200	$599.00	$559.00	BUY IT
Kodak DX3500	$899.00	$829.00	BUY IT
Kodak DX3600 Zoom	$1,299.00	$1,149.00	BUY IT
Kodak DX3900 Zoom	$1,799.00	$1,619.00	BUY IT
Kodak DX5000 Zoom	$1,699.00	$1,529.00	BUY IT

Nikon	Rec. Retail	Our Price	
Nikon CoolPix 775	$1,499.00	$1,349.00	BUY IT
Nikon CoolPix 995	$2,999.00	$2,699.00	BUY IT

Olympus	Rec. Retail	Our Price	
Olympus Camedia C-1	$899.00	$829.00	BUY IT
Olympus Camedia C-960 Zoom	$1,199.00	$1,099.00	BUY IT
Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00	BUY IT

Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00	BUY IT
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00	BUY IT

Sony	**Rec. Retail**	**Our Price**	
Sony Mavica FD75	$1,299.00	$1,219.00	BUY IT
Sony Mavica FD87	$1,699.00	$1,579.00	BUY IT
Sony Mavica FD92	$1,999.00	$1,849.00	BUY IT
Sony Mavica CD200	$2,599.00	$2,459.00	BUY IT
Sony Mavica CD300	$3,299.00	$3,099.00	BUY IT
Sony CyberShot DSC-P20	$999.00	$929.00	BUY IT
Sony CyberShot DSC-P30	$1,199.00	$1,119.00	BUY IT
Sony CyberShot DSC-P50	$1,599.00	$1,499.00	BUY IT
Sony CyberShot DSC-S75	$2,399.00	$2,249.00	BUY IT
Sony CyberShot DSC-S85	$2,799.00	$2,629.00	BUY IT

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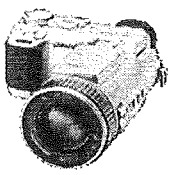
If you require any further information please contact us with the details listed

NEW! Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT!



Specifications:

Camera	Sony CyberShot DSC-707 Digital Still Camera (5.24 megapixels)
Reviews	Digital Photography Review, Online Digital Camera Reviews
Other Links	Manufacturer Homepage

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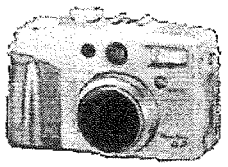
If you require any further information please contact us with Canon PowerShot G2

NEW Canon PowerShot G2	
RRP: $2,799.00	
Our Price: $2,599.00 BUY IT	

Specifications:

Camera	Canon PowerShot G2 Digital Camera (3.8 megapixels)
Reviews	Digital Photography Review, Digital Camera Reviews
Other Links	Manufacturer Homepage

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CONDITION FIVE:

Medium Level of Interactivity x Medium Depth of Information

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Welcome to DigiCams Online! We hope you are just browsing around to find out more about digital cameras, but if you have any questions, please feel free to contact us.

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Contact Us:
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Latest Release:
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After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

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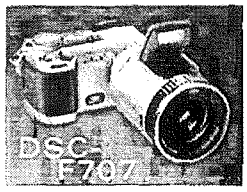
An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



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DigiCams Online

Welcome to DigiCams Online. If you are looking for a particular model that is not listed, please contact us for a quote. Thank you.

Canon	Rec. Retail	Our Price	
Canon PowerShot G1	$2,499.00	$2,299.00	BUY IT
Canon PowerShot G2	$2,799.00	$2,599.00	BUY IT
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00	BUY IT
Canon PowerShot IXUS 300	$1,799.00	$1,699.00	BUY IT
Canon PowerShot IXUS V	$1,549.00	$1,449.00	BUY IT
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00	BUY IT

Casio	Rec. Retail	Our Price	
Casio LV-10	$399.00	$349.00	BUY IT
Casio QV-2400	$1,699.00	$1,499.00	BUY IT
Casio QV-3500	$2,299.00	$2,099.00	BUY IT

Fuji	Rec. Retail	Our Price	
Fuji FinePix A101	$749.00	$699.00	BUY IT
Fuji FinePix A201	$899.00	$829.00	BUY IT
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Fuji FinePix 6800 Zoom	$2,699.00	$2,499.00	BUY IT
Fuji FinePix 6900 Zoom	$2,999.00	$2,649.00	BUY IT

Kodak	Rec. Retail	Our Price	
Kodak DC3200	$599.00	$559.00	BUY IT
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Nikon	Rec. Retail	Our Price	
Nikon CoolPix 775	$1,499.00	$1,349.00	BUY IT
Nikon CoolPix 995	$2,999.00	$2,699.00	BUY IT

Olympus	Rec. Retail	Our Price	
Olympus Camedia C-1	$899.00	$829.00	BUY IT
Olympus Camedia C-960 Zoom	$1,199.00	$1,099.00	BUY IT
Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00	BUY IT

Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00	BUY IT
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00	BUY IT

Sony	**Rec. Retail**	**Our Price**	
Sony Mavica FD75	$1,299.00	$1,219.00	BUY IT
Sony Mavica FD87	$1,699.00	$1,579.00	BUY IT
Sony Mavica FD92	$1,999.00	$1,849.00	BUY IT
Sony Mavica CD200	$2,599.00	$2,459.00	BUY IT
Sony Mavica CD300	$3,299.00	$3,099.00	BUY IT
Sony CyberShot DSC-P20	$999.00	$929.00	BUY IT
Sony CyberShot DSC-P30	$1,199.00	$1,119.00	BUY IT
Sony CyberShot DSC-P50	$1,599.00	$1,499.00	BUY IT
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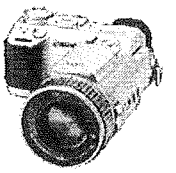
NEW Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT!



Specifications:

Image Formats	JPEG TIFF
Storage Media	Memory Stick
Connectivity	USB
Max Resolution	2,560 x 1,920 (5.24 megapixels)
Lower Resolutions	2,560 x 1,712 2,048 x 1,536 1,280 x 960 640 x 480
Zoom	5 x Optical 10 x Digital
Quality Levels	Fine Standard
Video Out	Yes, selectable NTSC / PAL
Warranty	12 months
Box Includes	Sony CyberShot DSC-707 Digital Still Camera 16 MB Memory Stick InfoLithium NP-FM50 Battery AC-L10 Adapter/Charger Lens cap Shoulder Strap USB Cable A/V Cable Instruction Manual CD-ROM: Sony USB Drivers, MGI PhotoSuite, MGI VideoSuite
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Other Links	Manufacturer Homepage

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DigiCams Online

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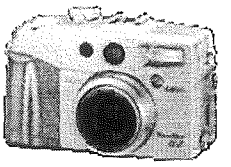

Specifications:

Image Formats	RAW JPEG (EXIF)
Storage Media	Compact Flash Type I or Type II (Microdrive Supported)
Connectivity	USB
Max Resolution	2,272 x 1,704 (3.8 megapixels)
Lower Resolutions	1,600 x 1,200 1,024 x 768 640 x 480
Zoom	3 x Optical 2 x or 4 x Digital
Quality Levels	Super-Fine Fine Normal
Video Out	Yes, selectable NTSC / PAL
Warranty	12 months
Box Includes	Canon PowerShot G2 Digital Camera 32 MB Compact Flash Type I Card BP-511 Lithium-Ion Battery CA-560 AC Adapter/Charger (110-240V) WL-D100 IR Remote Control Lens Cap and String Shoulder Strap USB Interface Cable AV Cable CD-ROM: USB / TWAIN Driver, Remote Capture, Adobe Photoshop 5.0LE User Manual
Reviews	Digital Photography Review, Digital Camera Reviews
Other Links	Manufacturer Homepage

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CONDITION SIX:

Medium Level of Interactivity x High Depth of Information

DigiCams Online

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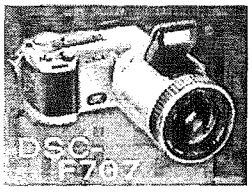

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DigiCams Online

Welcome to our online catalog! If you run into any problems or questions, feel free to contact us. All prices include GST.

contact us

Canon	Rec. Retail	Our Price	
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Fuji FinePix 2400 Zoom	$1,399.00	$1,269.00	BUY IT
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Fuji FinePix 4900 Zoom	$2,499.00	$2,299.00	BUY IT
Fuji FinePix 6800 Zoom	$2,699.00	$2,499.00	BUY IT
Fuji FinePix 6900 Zoom	$2,999.00	$2,649.00	BUY IT

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Kodak DX3900 Zoom	$1,799.00	$1,619.00	BUY IT
Kodak DX5000 Zoom	$1,699.00	$1,529.00	BUY IT

Nikon	Rec. Retail	Our Price	
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Nikon CoolPix 995	$2,999.00	$2,699.00	BUY IT

Olympus	Rec. Retail	Our Price	
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Olympus Camedia C-960 Zoom	$1,199.00	$1,099.00	BUY IT
Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00	BUY IT

Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00	BUY IT
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00	BUY IT

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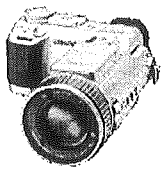
Sony Mavica FD87	$1,699.00	$1,579.00	BUY IT
Sony Mavica FD92	$1,999.00	$1,849.00	BUY IT
Sony Mavica CD200	$2,599.00	$2,459.00	BUY IT
Sony Mavica CD300	$3,299.00	$3,099.00	BUY IT
Sony CyberShot DSC-P20	$999.00	$929.00	BUY IT
Sony CyberShot DSC-P30	$1,199.00	$1,119.00	BUY IT
Sony CyberShot DSC-P50	$1,599.00	$1,499.00	BUY IT
Sony CyberShot DSC-S75	$2,399.00	$2,249.00	BUY IT
Sony CyberShot DSC-S85	$2,799.00	$2,629.00	BUY IT

Click to Proceed!

NEW Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT



Specifications:

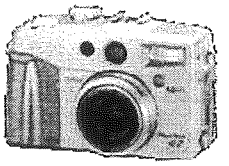
Image Formats	JPEG TIFF
Storage Media	Memory Stick
Connectivity	USB
Max Resolution	2,560 x 1,920 (5.24 megapixels)
Lower Resolutions	2,560 x 1,712 2,048 x 1,536 1,280 x 960 640 x 480
Image Ratio (w:h)	4:3 / 3:2
Zoom	5 x Optical 10 x Digital
Quality Levels	Fine Standard
Sensitivity Equiv.	Auto (ISO 100 - 320) ISO 100 ISO 200 ISO 400
Auto Focus	Contrast Detection 'Expanded' AF Hologram AF (automatic low light; laser)
Manual Focus	Via "focus by wire" ring at front of lens barrel
Normal Focus Range	50 cm (19.7 in) - Infinity
Macro Focus Range	2 cm (0.8 in) - 50 cm (19.7 in)
Min Shutter	Program AE: 1/30 sec Aperture Priority: 8 sec Manual / Shutter Priority: 30 sec
Max Shutter	1/1000 sec
Noise Reduction	Yes, for shutter speeds of 2.5 seconds or slower
Exposure Adjustment	-2EV to +2EV in 1/3EV steps
Exposure Modes	Program AE Aperture Priority Shutter Priority Full Manual Scene Mode: Twilight, Landscape, Portrait
Aperture Priority	Lens @ Wide: F2.0, F2.2, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.6, F6.3, F7.1, F8 Lens @ Tele: F2.4, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.6, F6.3, F7.1, F8
Shutter Priority	30", 25", 20", 15", 13", 10", 8", 7", 5", 4", 3", 2.5", 2, 1.6, 1.3, 1, 1/1.3, 1/1.6, 1/2, 1/2.5, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/13, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60, 1/80, 1/100, 1/125, 1/160, 1/200, 1/250, 1/320, 1/400, 1/500, 1/640, 1/800, 1/1000 sec * Indicated as 'NRx' where x is the shutter speed, noise reduction automatically enabled.
Metering	Multi-pattern (49 segment) Center-Weighted Average Spot
White Balance	Auto Manual Preset (custom)

	Daylight Incandescent
Continuous	Approx. 2.8 fps for 3 images
Movie Clip	MPEG HQ: 320 x 240, 16 fps, max 15 seconds (including audio) MPEG EX: 320 x 240, 8 fps, limited only by storage space (including audio) MPEG EX: 160 x 112, 8 fps, limited only by storage space (including audio)
Built-In Flash	Yes, automatic pop-up
Flash Range	ISO 100: 0.5 - 5 m (1.6 - 16.4 ft)
Flash Modes	Auto Anti Red-Eye Auto Flash On Flash Off
Flash Compensation	Low Normal High
Self-timer	Yes, 10 sec delay
Video Out	Yes, selectable NTSC / PAL
Viewfinder	Electronic Viewfinder with dioptre adjustment, 180,000 pixels
LCD	1.8" TFT 123,000 pixels
Body Material	Magnesium Alloy
Weight (inc. battery)	667 g (1.5 lb)
Dimensions (inc. grip)	120 x 67 x 148 mm (4.7 x 2.6 x 5.8 in)
Warranty	12 months
Box Includes	Sony CyberShot DSC-707 Digital Still Camera 16 MB Memory Stick InfoLithium NP-FM50 Battery AC-L10 Adapter/Charger Lens cap Shoulder Strap USB Cable A/V Cable Instruction Manual CD-ROM: Sony USB Drivers, MGI PhotoSuite, MGI VideoSuite
Reviews	Digital Photography Review, Online Digital Camera Reviews
Other Links	Manufacturer Homepage

NEW Canon PowerShot G2

RRP: $2,799.00

Our Price: $2,599.00 BUY IT



Specifications:

Image Formats	RAW JPEG (EXIF)
Storage Media	Compact Flash Type I or Type II (Microdrive Supported)
Connectivity	USB
Max Resolution	2,272 x 1,704 (3.8 megapixels)
Lower Resolutions	1,600 x 1,200 1,024 x 768 640 x 480
Image Ratio (w:h)	4:3
Zoom	3 x Optical 2 x or 4 x Digital
Quality Levels	Super-Fine Fine Normal
Sensitivity Equiv.	Auto (ISO 50 - 100) ISO 50 ISO 100 ISO 200 ISO 400
Auto Focus	Contrast Detection Continuous or Single AF 3 Selectable Focus Points
Manual Focus	6 cm (Wide) / 20 cm (Tele) - Infinity
Normal Focus Range	70 cm (27.6 in) - Infinity
Macro Focus Range	6 cm (2.4 in) - 70 cm (27.6 in)
Min Shutter	Auto: 1/8 sec Program / Aperture Priority: 1 sec Shutter Priority / Manual: 15 sec
Max Shutter	1/1000 sec
Noise Reduction	Yes, for shutter speeds of 1.3 seconds or slower
Exposure Adjustment	-2EV to +2EV in 1/3EV steps
Exposure Modes	Auto Creative: Program AE, Shutter Priority, Aperture Priority, Manual Image Control: Pan-Focus, Portrait, Landscape, Night Scene, Colour Effects, Stitch Movie
Aperture Priority	Lens @ Wide: F2.0, F2.2, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.0, F5.6, F6.3, F7.1, F8.0 Lens @ Tele: F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.0, F5.6, F6.3, F7.1, F8.0
Shutter Priority	15, 13, 10, 8, 6, 5, 4, 3.2, 2.5, 2, 1.6, 1.3, 1, 0.8, 0.6, 0.5, 0.4, 0.3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/13, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60, 1/80, 1/100, 1/125, 1/160, 1/200, 1/250, 1/320, 1/400, 1/500, 1/640, 1/800, 1/1000
Metering	Evaluative Center-Weighted Average Spot (can be tied to selected focus point)

White Balance	Auto Daylight Cloudy Tungsten Fluorescent Fluorescent High Flash Custom Preset (Manual)
Continuous	High speed: 2.5 fps, max 5 images Normal: 1.5 fps, max 9 images (Large / Fine, LCD switched off)
Movie Clip	320 x 240, 15 fps, max 30 secs (including audio) 160 x 120, 15 fps, max 120 secs (including audio)
Built-in Flash	Yes, fixed internal
Flash Range	Wide: 0.7 - 4.5 m (2.3 - 14.8 ft) Tele: 0.7 - 3.6 m (2.3 - 11.8 ft)
Flash Modes	Auto Red-Eye Reduction Auto Red-Eye Reduction Flash On Flash Off
Flash Compensation	+/-2 EV in 0.3 EV steps
Self-timer	Yes, 10 sec delay
Video Out	Yes, selectable NTSC / PAL
Viewfinder	Optical with dioptre adjustment, approx. 84% frame coverage
LCD	1.8" TFT flip-out and twist, approx. 100% frame coverage
Body Material	Front magnesium alloy, back high-impact plastic
Weight (inc. battery)	510 g (1.1 lb)
Dimensions (inc. grip)	121 x 77 x 64 mm (4.8 x 3.0 x 2.5 in)
Warranty	12 months
Box Includes	Canon PowerShot G2 Digital Camera 32 MB Compact Flash Type I Card BP-511 Lithium-Ion Battery CA-560 AC Adapter/Charger (110-240V) WL-D100 IR Remote Control Lens Cap and String Shoulder Strap USB Interface Cable AV Cable CD-ROM: USB / TWAIN Driver, Remote Capture, Adobe Photoshop 5.0LE User Manual
Reviews	Digital Photography Review, Digital Camera Reviews
Other Links	Manufacturer Homepage

CONDITION SEVEN:

High Level of Interactivity x Low Depth of Information

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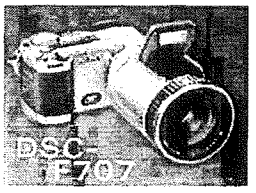
Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

Coming Soon:
Sony CyberShot DSC-707

An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



Product Search:
Manufacturer: Select Brand... **Model:**
Min Megapixel: At least... **Keywords:**
Price Range: to SEARCH

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Welcome to our online catalog. If you are looking for a particular model that is not listed, please contact us. All prices indicate GST.

Canon	Rec. Retail	Our Price	
Canon PowerShot G1	$2,499.00	$2,299.00	BUY IT
Canon PowerShot G2	$2,799.00	$2,599.00	BUY IT
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00	BUY IT
Canon PowerShot IXUS 300	$1,799.00	$1,699.00	BUY IT
Canon PowerShot IXUS V	$1,549.00	$1,449.00	BUY IT
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00	BUY IT

Casio	Rec. Retail	Our Price	
Casio LV-10	$399.00	$349.00	BUY IT
Casio QV-2400	$1,699.00	$1,499.00	BUY IT
Casio QV-3500	$2,299.00	$2,099.00	BUY IT

Fuji	Rec. Retail	Our Price	
Fuji FinePix A101	$749.00	$699.00	BUY IT
Fuji FinePix A201	$899.00	$829.00	BUY IT
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Fuji FinePix 2400 Zoom	$1,399.00	$1,269.00	BUY IT
Fuji FinePix 4800 Zoom	$2,199.00	$2,029.00	BUY IT
Fuji FinePix 4900 Zoom	$2,499.00	$2,299.00	BUY IT
Fuji FinePix 6800 Zoom	$2,699.00	$2,499.00	BUY IT
Fuji FinePix 6900 Zoom	$2,999.00	$2,649.00	BUY IT

Kodak	Rec. Retail	Our Price	
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Kodak DX3600 Zoom	$1,299.00	$1,149.00	BUY IT
Kodak DX3900 Zoom	$1,799.00	$1,619.00	BUY IT
Kodak DX5000 Zoom	$1,699.00	$1,529.00	BUY IT

Nikon	Rec. Retail	Our Price	
Nikon CoolPix 775	$1,499.00	$1,349.00	BUY IT
Nikon CoolPix 995	$2,999.00	$2,699.00	BUY IT

Olympus	Rec. Retail	Our Price	
Olympus Camedia C-1	$899.00	$829.00	BUY IT
Olympus Camedia C-960 Zoom	$1,199.00	$1,099.00	BUY IT
Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00	BUY IT

Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00	BUY IT
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00	BUY IT

Sony	**Rec. Retail**	**Our Price**	
Sony Mavica FD75	$1,299.00	$1,219.00	BUY IT
Sony Mavica FD87	$1,699.00	$1,579.00	BUY IT
Sony Mavica FD92	$1,999.00	$1,849.00	BUY IT
Sony Mavica CD200	$2,599.00	$2,459.00	BUY IT
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Sony CyberShot DSC-S85	$2,799.00	$2,629.00	BUY IT

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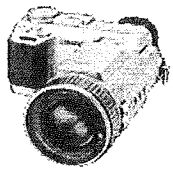
NEW Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT



Specifications:

Camera	Sony CyberShot DSC-707 Digital Still Camera (5.24 megapixels)
Reviews	Digital Photography Review, Online Digital Camera Reviews
Other Links	Manufacturer Homepage

Customer Reviews

Jim	25 Oct 01	I can't wait for this camera!! The...
Don Ricketts	24 Oct 01	The reviews on this thing look...
P K	22 Oct 01	I preordered mine the day I first...

Post your own review...

Product Search:

Manufacturer: Select Brand... **Model:**

Min Megapixel: At least... **Keywords:**

Price Range: to SEARCH

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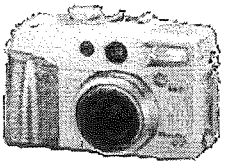
NEW **Canon PowerShot G2**

RRP: $2,799.00

Our Price: $2,599.00 BUY IT



Specifications:

Camera	Canon PowerShot G2 Digital Camera (3.8 megapixels)
Reviews	Digital Photography Review, Digital Camera Reviews
Other Links	Manufacturer Homepage

Customer Reviews

Benny	24 Oct 01	I just bought the G2, I tested it many...
Mike O'Keefe	23 Oct 01	Compared with the G1, its better...
Sue	23 Oct 01	Finally the perfect combination of...
Jay T.	21 Oct 01	G2 is an amazing camera. I have...

Post your own review...

Product Search:

Manufacturer: Select Brand... **Model:**

Min Megapixel: At least... **Keywords:**

Price Range: to SEARCH

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CONDITION EIGHT:

High Level of Interactivity x Medium Depth of Information

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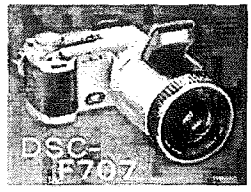
Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

Coming Soon:
Sony CyberShot DSC-707

An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



Product Search:
Manufacturer: Select Brand... **Model:**
Min Megapixel: At least... **Keywords:**
Price Range: to SEARCH

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prices include GST

Canon	Rec. Retail	Our Price	
Canon PowerShot G1	$2,499.00	$2,299.00	BUY IT
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Canon PowerShot IXUS 300	$1,799.00	$1,699.00	BUY IT
Canon PowerShot IXUS V	$1,549.00	$1,449.00	BUY IT
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Casio	Rec. Retail	Our Price	
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Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00	BUY IT
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00	BUY IT

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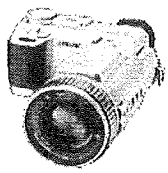
If you require any further information, please contact us. All prices in AUD/GST

NEW Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT!



Specifications:

Image Formats	JPEG TIFF
Storage Media	Memory Stick
Connectivity	USB
Max Resolution	2,560 x 1,920 (5.24 megapixels)
Lower Resolutions	2,560 x 1,712 2,048 x 1,536 1,280 x 960 640 x 480
Zoom	5 x Optical 10 x Digital
Quality Levels	Fine Standard
Video Out	Yes, selectable NTSC / PAL
Warranty	12 months
Box Includes	Sony CyberShot DSC-707 Digital Still Camera 16 MB Memory Stick InfoLithium NP-FM50 Battery AC-L10 Adapter/Charger Lens cap Shoulder Strap USB Cable A/V Cable Instruction Manual CD-ROM: Sony USB Drivers, MGI PhotoSuite, MGI VideoSuite
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Other Links	Manufacturer Homepage
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Post your own review...

Product Search: **Manufacturer:** Select Brand... **Model:** **Min Megapixel:** At least... **Keywords:** **Price Range:** to SEARCH

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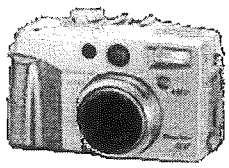
If you require any further information, please **contact us**. All prices include GST.

NEW Canon PowerShot G2

RRP: $2,799.00

Our Price: $2,599.00 BUY IT



Specifications:

Image Formats	RAW JPEG (EXIF)
Storage Media	Compact Flash Type I or Type II (Microdrive Supported)
Connectivity	USB
Max Resolution	2,272 x 1,704 (3.8 megapixels)
Lower Resolutions	1,600 x 1,200 1,024 x 768 640 x 480
Zoom	3 x Optical 2 x or 4 x Digital
Quality Levels	Super-Fine Fine Normal
Video Out	Yes, selectable NTSC / PAL
Warranty	12 months
Box Includes	Canon PowerShot G2 Digital Camera 32 MB Compact Flash Type I Card BP-511 Lithium-Ion Battery CA-560 AC Adapter/Charger (110-240V) WL-D100 IR Remote Control Lens Cap and String Shoulder Strap USB Interface Cable AV Cable CD-ROM: USB / TWAIN Driver, Remote Capture, Adobe Photoshop 5.0LE User Manual
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Post your own review...

Product Search: **Manufacturer:** Select Brand... **Model:** **Min Megapixel:** At least... **Keywords:** **Price Range:** to SEARCH

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CONDITION NINE:

High Level of Interactivity x High Depth of Information

DigiCams Online

Welcome to DigiCams Online! We look forward to helping you with all of your digital camera needs. If you have any questions about our online store, please don't hesitate to contact us.

Join Mailing List: enter email address... ◉ subscribe ○ unsubscribe GO

Cameras:
Canon
Casio
Fuji
Kodak
Nikon
Olympus
Sony

Accessories:
Adapters
Batteries and Chargers
Carry Cases
Lenses
Memory Cards
Other

Information:
Buying Guide
Camera Reviews
Digital Camera News
Discussion Forum
Frequent Questions

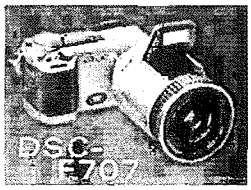
Contact Us:
Contact Information

Latest Release:
Canon PowerShot G2

After listening to their customers about the G1, Canon releases the new 4.0 megapixel G2. Canon just keeps getting better!

Coming Soon:
Sony CyberShot DSC-707

An update of the ever popular DSC-505V. 5.24 megapixels, 10 x digital zoom, and longer battery life. Price: $TBA



Product Search:
Manufacturer: Select Brand... **Model:**
Min Megapixel: At least... **Keywords:**
Price Range: to SEARCH

Click to Proceed!

DigiCams Online

Welcome to our online catalog. If you are looking for a particular model that is not listed, please contact us. All prices include GST.

Canon	Rec. Retail	Our Price	
Canon PowerShot G1	$2,499.00	$2,299.00	BUY IT
Canon PowerShot G2	$2,799.00	$2,599.00	BUY IT
Canon PowerShot IXUS 2.1	$1,499.00	$1,299.00	BUY IT
Canon PowerShot IXUS 300	$1,799.00	$1,699.00	BUY IT
Canon PowerShot IXUS V	$1,549.00	$1,449.00	BUY IT
Canon PowerShot Pro 90 IS	$3,799.00	$3,499.00	BUY IT

Casio	Rec. Retail	Our Price	
Casio LV-10	$399.00	$349.00	BUY IT
Casio QV-2400	$1,699.00	$1,499.00	BUY IT
Casio QV-3500	$2,299.00	$2,099.00	BUY IT

Fuji	Rec. Retail	Our Price	
Fuji FinePix A101	$749.00	$699.00	BUY IT
Fuji FinePix A201	$899.00	$829.00	BUY IT
Fuji FinePix 1300	$899.00	$829.00	BUY IT
Fuji FinePix 2300	$1,236.00	$1,099.00	BUY IT
Fuji FinePix 2400 Zoom	$1,399.00	$1,269.00	BUY IT
Fuji FinePix 4800 Zoom	$2,199.00	$2,029.00	BUY IT
Fuji FinePix 4900 Zoom	$2,499.00	$2,299.00	BUY IT
Fuji FinePix 6800 Zoom	$2,699.00	$2,499.00	BUY IT
Fuji FinePix 6900 Zoom	$2,999.00	$2,649.00	BUY IT

Kodak	Rec. Retail	Our Price	
Kodak DC3200	$599.00	$559.00	BUY IT
Kodak DX3500	$899.00	$829.00	BUY IT
Kodak DX3600 Zoom	$1,299.00	$1,149.00	BUY IT
Kodak DX3900 Zoom	$1,799.00	$1,619.00	BUY IT
Kodak DX5000 Zoom	$1,699.00	$1,529.00	BUY IT

Nikon	Rec. Retail	Our Price	
Nikon CoolPix 775	$1,499.00	$1,349.00	BUY IT
Nikon CoolPix 995	$2,999.00	$2,699.00	BUY IT

Olympus	Rec. Retail	Our Price	
Olympus Camedia C-1	$899.00	$829.00	BUY IT
Olympus Camedia C-960 Zoom	$1,199.00	$1,099.00	BUY IT
Olympus Camedia C-990 Zoom	$1,499.00	$1,399.00	BUY IT

Olympus Camedia C-2040 Zoom	$1,899.00	$1,779.00	BUY IT
Olympus Camedia C-3040 Zoom	$2,999.00	$2,799.00	BUY IT

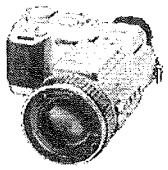
Sony	**Rec. Retail**	**Our Price**	
Sony Mavica FD75	$1,299.00	$1,219.00	BUY IT
Sony Mavica FD87	$1,699.00	$1,579.00	BUY IT
Sony Mavica FD92	$1,999.00	$1,849.00	BUY IT
Sony Mavica CD200	$2,599.00	$2,459.00	BUY IT
Sony Mavica CD300	$3,299.00	$3,099.00	BUY IT
Sony CyberShot DSC-P20	$999.00	$929.00	BUY IT
Sony CyberShot DSC-P30	$1,199.00	$1,119.00	BUY IT
Sony CyberShot DSC-P50	$1,599.00	$1,499.00	BUY IT
Sony CyberShot DSC-S75	$2,399.00	$2,249.00	BUY IT
Sony CyberShot DSC-S85	$2,799.00	$2,629.00	BUY IT

Click to Proceed!

NEW Sony CyberShot DSC-707

RRP: $TBA

Our Price: $TBA BUY IT*



Specifications:

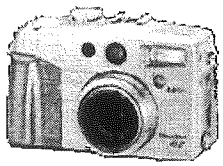
Image Formats	JPEG TIFF
Storage Media	Memory Stick
Connectivity	USB
Max Resolution	2,560 x 1,920 (5.24 megapixels)
Lower Resolutions	2,560 x 1,712 2,048 x 1,536 1,280 x 960 640 x 480
Image Ratio (w:h)	4:3 / 3:2
Zoom	5 x Optical 10 x Digital
Quality Levels	Fine Standard
Sensitivity Equiv.	Auto (ISO 100 - 320) ISO 100 ISO 200 ISO 400
Auto Focus	Contrast Detection 'Expanded' AF Hologram AF (automatic low light; laser)
Manual Focus	Via "focus by wire" ring at front of lens barrel
Normal Focus Range	50 cm (19.7 in) - Infinity
Macro Focus Range	2 cm (0.8 in) - 50 cm (19.7 in)
Min Shutter	Program AE: 1/30 sec Aperture Priority: 8 sec Manual / Shutter Priority: 30 sec
Max Shutter	1/1000 sec
Noise Reduction	Yes, for shutter speeds of 2.5 seconds or slower
Exposure Adjustment	-2EV to +2EV in 1/3EV steps
Exposure Modes	Program AE Aperture Priority Shutter Priority Full Manual Scene Mode: Twilight, Landscape, Portrait
Aperture Priority	Lens @ Wide: F2.0, F2.2, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.6, F6.3, F7.1, F8 Lens @ Tele: F2.4, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.6, F6.3, F7.1, F8
Shutter Priority	30", 25", 20", 15", 13", 10", 8", 7", 5", 4", 3", 2.5", 2, 1.6, 1.3, 1, 1/1.3, 1/1.6, 1/2, 1/2.5, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/13, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60, 1/80, 1/100, 1/125, 1/160, 1/200, 1/250, 1/320, 1/400, 1/500, 1/640, 1/800, 1/1000 sec * Indicated as 'NRx' where x is the shutter speed, noise reduction automatically enabled.
Metering	Multi-pattern (49 segment) Center-Weighted Average Spot
White Balance	Auto Manual Preset (custom)

	Daylight Incandescent
Continuous	Approx. 2.8 fps for 3 images
Movie Clip	MPEG HQ: 320 x 240, 16 fps, max 15 seconds (including audio) MPEG EX: 320 x 240, 8 fps, limited only by storage space (including audio) MPEG EX: 160 x 112, 8 fps, limited only by storage space (including audio)
Built-In Flash	Yes, automatic pop-up
Flash Range	ISO 100: 0.5 - 5 m (1.6 - 16.4 ft)
Flash Modes	Auto Anti Red-Eye Auto Flash On Flash Off
Flash Compensation	Low Normal High
Self-timer	Yes, 10 sec delay
Video Out	Yes, selectable NTSC / PAL
Viewfinder	Electronic Viewfinder with dioptre adjustment, 180,000 pixels
LCD	1.8" TFT 123,000 pixels
Body Material	Magnesium Alloy
Weight (inc. battery)	667 g (1.5 lb)
Dimensions (inc. grip)	120 x 67 x 148 mm (4.7 x 2.6 x 5.8 in)
Warranty	12 months
Box Includes	Sony CyberShot DSC-707 Digital Still Camera 16 MB Memory Stick InfoLithium NP-FM50 Battery AC-L10 Adapter/Charger Lens cap Shoulder Strap USB Cable A/V Cable Instruction Manual CD-ROM: Sony USB Drivers, MGI PhotoSuite, MGI VideoSuite
Reviews	Digital Photography Review, Online Digital Camera Reviews
Other Links	Manufacturer Homepage
Customer Reviews	Jim 25 Oct 01 I can't wait for this camera!! The... Don Ricketts 24 Oct 01 The reviews on this thing look... P K 22 Oct 01 I preordered mine the day I first...

Post your own review...

Product Search: **Manufacturer:** Select Brand... **Model:** **Min Megapixel:** At least... **Keywords:** **Price Range:** to SEARCH

Click to Proceed!

NEW Canon PowerShot G2	
RRP: $2,799.00	
Our Price: $2,599.00 BUY IT	

Specifications:

Image Formats	RAW JPEG (EXIF)
Storage Media	Compact Flash Type I or Type II (Microdrive Supported)
Connectivity	USB
Max Resolution	2,272 x 1,704 (3.8 megapixels)
Lower Resolutions	1,600 x 1,200 1,024 x 768 640 x 480
Image Ratio (w:h)	4:3
Zoom	3 x Optical 2 x or 4 x Digital
Quality Levels	Super-Fine Fine Normal
Sensitivity Equiv.	Auto (ISO 50 - 100) ISO 50 ISO 100 ISO 200 ISO 400
Auto Focus	Contrast Detection Continuous or Single AF 3 Selectable Focus Points
Manual Focus	6 cm (Wide) / 20 cm (Tele) - Infinity
Normal Focus Range	70 cm (27.6 in) - Infinity
Macro Focus Range	6 cm (2.4 in) - 70 cm (27.6 in)
Min Shutter	Auto: 1/8 sec Program / Aperture Priority: 1 sec Shutter Priority / Manual: 15 sec
Max Shutter	1/1000 sec
Noise Reduction	Yes, for shutter speeds of 1.3 seconds or slower
Exposure Adjustment	-2EV to +2EV in 1/3EV steps
Exposure Modes	Auto Creative: Program AE, Shutter Priority, Aperture Priority, Manual Image Control: Pan-Focus, Portrait, Landscape, Night Scene, Colour Effects, Stitch Movie
Aperture Priority	Lens @ Wide: F2.0, F2.2, F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.0, F5.6, F6.3, F7.1, F8.0 Lens @ Tele: F2.5, F2.8, F3.2, F3.5, F4.0, F4.5, F5.0, F5.6, F6.3, F7.1, F8.0
Shutter Priority	15, 13, 10, 8, 6, 5, 4, 3.2, 2.5, 2, 1.6, 1.3, 1, 0.8, 0.6, 0.5, 0.4, 0.3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/13, 1/15, 1/20, 1/25, 1/30, 1/40, 1/50, 1/60, 1/80, 1/100, 1/125, 1/160, 1/200, 1/250, 1/320, 1/400, 1/500, 1/640, 1/800, 1/1000
Metering	Evaluative Center-Weighted Average Spot (can be tied to selected focus point)
	Auto Daylight

White Balance	Cloudy Tungsten Fluorescent Fluorescent High Flash Custom Preset (Manual)
Continuous	High speed: 2.5 fps, max 5 images Normal: 1.5 fps, max 9 images (Large / Fine, LCD switched off)
Movie Clip	320 x 240, 15 fps, max 30 secs (including audio) 160 x 120, 15 fps, max 120 secs (including audio)
Built-in Flash	Yes, fixed internal
Flash Range	Wide: 0.7 - 4.5 m (2.3 - 14.8 ft) Tele: 0.7 - 3.6 m (2.3 - 11.8 ft)
Flash Modes	Auto Red-Eye Reduction Auto Red-Eye Reduction Flash On Flash Off
Flash Compensation	+/-2 EV in 0.3 EV steps
Self-timer	Yes, 10 sec delay
Video Out	Yes, selectable NTSC / PAL
Viewfinder	Optical with dioptre adjustment, approx. 84% frame coverage
LCD	1.8" TFT flip-out and twist, approx. 100% frame coverage
Body Material	Front magnesium alloy, back high-impact plastic
Weight (inc. battery)	510 g (1.1 lb)
Dimensions (inc. grip)	121 x 77 x 64 mm (4.8 x 3.0 x 2.5 in)
Warranty	12 months
Box Includes	Canon PowerShot G2 Digital Camera 32 MB Compact Flash Type I Card BP-511 Lithium-Ion Battery CA-560 AC Adapter/Charger (110-240V) WL-D100 IR Remote Control Lens Cap and String Shoulder Strap USB Interface Cable AV Cable CD-ROM: USB / TWAIN Driver, Remote Capture, Adobe Photoshop 5.0LE User Manual
Reviews	Digital Photography Review, Digital Camera Reviews
Other Links	Manufacturer Homepage
Customer Reviews	Benny 24 Oct 01 - I just bought the G2. I tested it many... Mike O'Keefe 23 Oct 01 - Compared with the G1, its better... Sue 23 Oct 01 - Finally the perfect combination of... Jay T 21 Oct 01 - G2 is an amazing camera. I have...

Post your own review...

Product Search: **Manufacturer:** Select Brand... **Model:**

Min Megapixel: At least... **Keywords:**

Price Range: to SEARCH

Click to Proceed!

APPENDIX THREE:

Online Experiment – Questionnaire

Now for a few questions!

The information gathered here:

- is confidential
- will only be used for academic purposes.

Please note that:

- Your first impressions are important!
- Remember that there are no right or wrong answers.

Question 1: About the DigiCams Online Website

After viewing the DigiCams Online website, what do you think about it? Simply use the pull-down menus to indicate your level of agreement with each of the following statements.

This website would allow me to easily communicate with the company if I ever had a specific question or wanted to purchase a product.	>>> Select your answer!
I thought this website provided detailed information about the products featured.	>>> Select your answer!
This website could easily let me access other consumers' opinions about the products featured.	>>> Select your answer!
I thought this website had the ability to respond to my specific requests for information so I could access it quickly and efficiently.	>>> Select your answer!
This website provided a comprehensive list of the technical specifications of the products featured.	>>> Select your answer!
I thought this website really gave me some control (i.e., flexibility) over the content that I wanted to see.	>>> Select your answer!
This website provided information on a large number of product attributes for each of the cameras featured.	>>> Select your answer!
Overall, I thought this website was highly interactive.	>>> Select your answer!

Question 2: Your Feelings about the DigiCams Online Website

Each pair of words below describes a feeling dimension. Some of the pairs might seem unusual, but you may generally feel more one way than the other. So, for each pair, please indicate to show how you feel about the DigiCams Online website. Please take your time so as to arrive at a real characteristic description of your feelings.

Happy	○	○	○	○	○	○	○	○	○	Unhappy
Pleased	○	○	○	○	○	○	○	○	○	Annoyed
Satisfied	○	○	○	○	○	○	○	○	○	Unsatisfied
Contented	○	○	○	○	○	○	○	○	○	Melancholic
Hopeful	○	○	○	○	○	○	○	○	○	Despairing
Relaxed	○	○	○	○	○	○	○	○	○	Bored
Jittery	○	○	○	○	○	○	○	○	○	Dull
Excited	○	○	○	○	○	○	○	○	○	Calm
Frenzied	○	○	○	○	○	○	○	○	○	Sluggish
Stimulated	○	○	○	○	○	○	○	○	○	Relaxed
Wide Awake	○	○	○	○	○	○	○	○	○	Sleepy
Aroused	○	○	○	○	○	○	○	○	○	Unaroused

Question 3: Evaluating the DigiCams Online Website

Based on what you can remember, how would you evaluate the DigiCams Online website?

Important	○	○	○	○	○	○	○	Not Important
Informative	○	○	○	○	○	○	○	Uninformative
Not Helpful	○	○	○	○	○	○	○	Helpful
Useful	○	○	○	○	○	○	○	Not Useful
Makes me curious	○	○	○	○	○	○	○	Does not make me curious
Not Boring	○	○	○	○	○	○	○	Boring
Interesting	○	○	○	○	○	○	○	Not Interesting
Not Messy	○	○	○	○	○	○	○	Messy
Cumbersome	○	○	○	○	○	○	○	Not Cumbersome
Confusing	○	○	○	○	○	○	○	Not Confusing
Not Irritating	○	○	○	○	○	○	○	Irritating

Question 4: About the Online Retailer "DigiCams Online"

What are your impressions of the online retailer "DigiCams Online"?

Good	○	○	○	○	○	○	○	Bad
Like	○	○	○	○	○	○	○	Dislike
Unfavourable	○	○	○	○	○	○	○	Favourable
Positive	○	○	○	○	○	○	○	Negative

Question 5: Buying a Digital Camera

If you were going to buy a digital camera, what is the likelihood you would consider buying one from DigiCams Online?

Certain	○	○	○	○	○	○	○	Uncertain
Unlikely	○	○	○	○	○	○	○	Likely
Probable	○	○	○	○	○	○	○	Improbable
Possible	○	○	○	○	○	○	○	Impossible

Question 6: Your Interest in Digital Cameras

To me digital cameras are:

Important	○	○	○	○	○	○	○	Unimportant
Boring	○	○	○	○	○	○	○	Interesting
Relevant	○	○	○	○	○	○	○	Irrelevant
Exciting	○	○	○	○	○	○	○	Unexciting
Mean nothing to me	○	○	○	○	○	○	○	Mean a lot to me
Appealing	○	○	○	○	○	○	○	Unappealing
Fascinating	○	○	○	○	○	○	○	Mundane
Worthless	○	○	○	○	○	○	○	Valuable
Involving	○	○	○	○	○	○	○	Uninvolving

Not Needed ○ ○ ○ ○ ○ ○ ○ Needed

Question 7: About Yourself

For each of the statements below, please indicate to what extent the statement is characteristic of you.

I would prefer complex to simple problems. >>> Select your answer!

Thinking is not my idea of fun. >>> Select your answer!

I find satisfaction in deliberating hard and for long hours. >>> Select your answer!

I only think as hard as I have to. >>> Select your answer!

I like tasks that require little thought once I have learned them. >>> Select your answer!

I prefer my life to be filled with puzzles that I must solve. >>> Select your answer!

The notion of thinking abstractly is appealing to me. >>> Select your answer!

I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought. >>> Select your answer!

It's enough for me that something gets the job done: I don't care how or why it works. >>> Select your answer!

I usually end up deliberating about issues even when they do not affect me personally. >>> Select your answer!

Now your task is almost complete. We need some background information for statistical purposes. You are almost done!

How did you find out about this study?

- ○ Followed link from another website
- ○ Found link using a search engine
- ○ Saw posting on USENET newsgroup
- ○ Received e-mail from mailing list
- ○ Was told URL by friends
- ○ Read about it in a newspaper, magazine, or newsletter
- ○ Other sources

How much time do you usually spend per week using the Internet?

- ○ about an hour a week or less
- ○ between 1 and 10 hours per week
- ○ between 11 and 25 hours per week
- ○ more than 25 hours per week

When did you start using the Internet? >>> Select your answer!

How would you describe your proficiency with the Internet?

- ○ novice user: just learning how to use the Internet
- ○ intermediate user: feel comfortable using the Internet
- ○ advanced user: can use most or all Internet services

Are you currently at...?

- ○ your home
- ○ your workplace
- ○ your school or university
- ○ a friend's home
- ○ some other place

Are you...?

- ○ Male
- ○ Female

What is your age?

- ○ 18 - 24
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 years plus

In what country/region do you live?	>>> Select your answer!
How would you classify your annual household income level in relative terms within your country?	>>> Select your answer!
What is the highest level of education you have completed?	>>> Select your answer!
What is your main occupation?	>>> Select your answer!
What is the processor (CPU) in your computer?	>>> Select your answer!
What is the speed of your Internet connection?	>>> Select your answer!

Thank you for participating in our study!

If you wish to be included in our prize draw, make sure you include your e-mail address below. Remember that only completed surveys are eligible and multiple submissions will not be accepted.

E-mail address (optional):

Your comments:

Submit Your Results! Reset

APPENDIX FOUR:

Socio-Demographic Profile of Sample

How did you find out about this study?

HOWFIND

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	followed link	90	25.0	25.0	25.0
	found link on search engine	1	.3	.3	25.3
	saw USENET posting	188	52.2	52.2	77.5
	e-mail from mailing list	51	14.2	14.2	91.7
	told URL by friends	13	3.6	3.6	95.3
	read about it	3	.8	.8	96.1
	other sources	14	3.9	3.9	100.0
	Total	360	100.0	100.0	

How much time do you usually spend per week using the Internet?

TIMEUSE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 hr a week	10	2.8	2.8	2.8
	1-10 hr week	90	25.0	25.0	27.8
	11-25 hr week	116	32.2	32.2	60.0
	more than 25 hr week	144	40.0	40.0	100.0
	Total	360	100.0	100.0	

When did you start using the Internet?

STARTUSE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2001	7	1.9	1.9	1.9
	2000	20	5.6	5.6	7.5
	1999	40	11.1	11.1	18.6
	1998	58	16.1	16.1	34.7
	1997	65	18.1	18.1	52.8
	1996	55	15.3	15.3	68.1
	before 1996	115	31.9	31.9	100.0
	Total	360	100.0	100.0	

How would you describe your proficiency with the Internet?

EXPERT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	novice	2	.6	.6	.6
	intermediate	115	31.9	32.1	32.7
	advanced	241	66.9	67.3	100.0
	Total	358	99.4	100.0	
Missing	System	2	.6		
Total		360	100.0		

Are you currently at...?

WHERE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	home	309	85.8	85.8	85.8
	workplace	33	9.2	9.2	95.0
	school/uni	10	2.8	2.8	97.8
	some other place	8	2.2	2.2	100.0
	Total	360	100.0	100.0	

Are you...?

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	221	61.4	61.7	61.7
	female	137	38.1	38.3	100.0
	Total	358	99.4	100.0	
Missing	System	2	.6		
Total		360	100.0		

What is your age?

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	118	32.8	32.8	32.8
	25-34	112	31.1	31.1	63.9
	35-44	87	24.2	24.2	88.1
	45-54	32	8.9	8.9	96.9
	55-64	11	3.1	3.1	100.0
	Total	360	100.0	100.0	

In what country/region do you live?

COUNTRY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	New Zealand	154	42.8	42.8	42.8
	Australia	206	57.2	57.2	100.0
	Total	360	100.0	100.0	

How would you classify your annual household income level in relative terms within your country?

INCOME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	lower third	81	22.5	22.6	22.6
	middle third	152	42.2	42.3	64.9
	upper third	73	20.3	20.3	85.2
	prefer no answer	53	14.7	14.8	100.0
	Total	359	99.7	100.0	
Missing	9.00	1	.3		
Total		360	100.0		

What is the highest level of education you have completed?

EDULEVEL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	some high school	27	7.5	7.5	7.5
	high school graduate	85	23.6	23.7	31.2
	some college/uni	106	29.4	29.5	60.7
	completed college/uni	72	20.0	20.1	80.8
	some postgrad	28	7.8	7.8	88.6
	grad/prof degree	41	11.4	11.4	100.0
	Total	359	99.7	100.0	
Missing	9.00	1	.3		
Total		360	100.0		

What is your main occupation?

OCCUPATE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	94	26.1	26.2	26.2
	work outside home	165	45.8	46.0	72.1
	work inside home	42	11.7	11.7	83.8
	retired	15	4.2	4.2	88.0
	other	31	8.6	8.6	96.7
	prefer no answer	12	3.3	3.3	100.0
	Total	359	99.7	100.0	
Missing	9.00	1	.3		
Total		360	100.0		

What is the processor (CPU) in your computer?

CPU

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PowerPc	5	1.4	1.4	1.4
	Pentium 3	132	36.7	36.7	38.1
	Pentium 2	76	21.1	21.1	59.2
	Pentium	36	10.0	10.0	69.2
	K6	15	4.2	4.2	73.3
	Other	61	16.9	16.9	90.3
	Don't Know	35	9.7	9.7	100.0
	Total	360	100.0	100.0	

What is the speed of your Internet connection?

INTSPEED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High Speed	83	23.1	23.1	23.1
	56.6	226	62.8	62.8	85.8
	Other	33	9.2	9.2	95.0
	Don't Know	18	5.0	5.0	100.0
	Total	360	100.0	100.0	

APPENDIX FIVE:

Factor Loadings of Multidimensional Scales

Factor Loadings of Pleasure-Arousal Scales (Two Factor Solution)

	Factor	
Scale Item	**1**	**2**
	Pleasure	*Arousal*
Satisfied – Unsatisfied	.870	
Happy – Unhappy	.868	
Pleased – Annoyed	.854	
Contented – Melancholic	.813	
Hopeful – Despairing	.680	
Stimulated – Relaxed		.840
Excited – Calm		.807
Aroused – Unaroused		.734
Frenzied – Sluggish		.701
Jittery – Dull		.617
% of Variance Explained	**49.5**	**16.6**

Factor Loadings of Attitude toward the Website Scale (Three Factor Solution)

	Factor		
Scale Item	**1**	**2**	**3**
	Interestingness	*Utilitarianism*	*Organisation*
Not Boring – Boring	.869		
Interesting – Not Interesting	.867		
Makes me curious – Does not make...	.805		
Informative – Uninformative		.817	
Helpful – Not Helpful		.795	
Useful – Not Useful		.774	
Not Cumbersome – Cumbersome			.805
Not Confusing – Confusing			.736
Not Messy – Messy			.699
% of Variance Explained	**44.6**	**15.1**	**11.1**

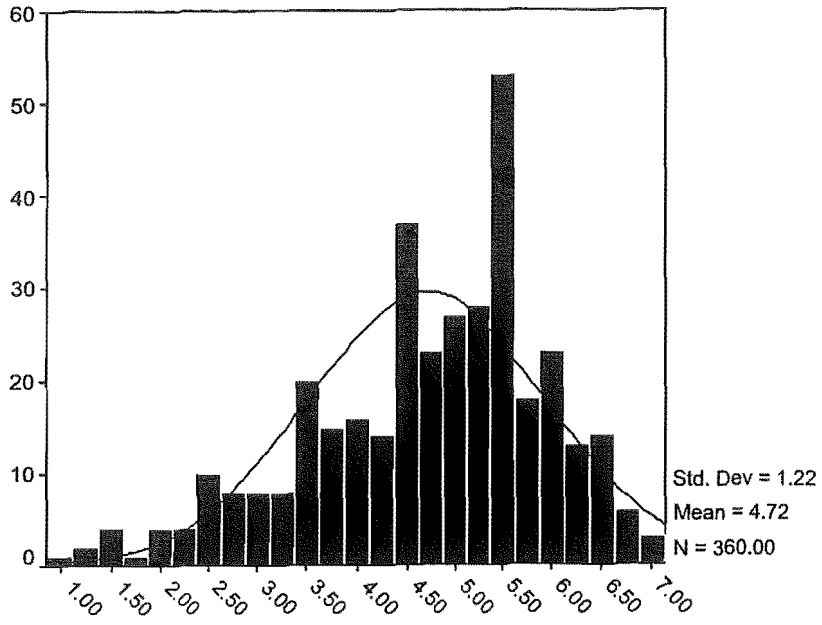
Factor Loadings of Need for Cognition Scale (Two Factor Solution)

	Factor	
Scale Item	**1**	**2**
	Problem-Solving	*Hedonic*
Thinking abstractly is appealing...	.770	
I prefer tasks that are intellectual...	.749	
I like life to be filled with puzzles...	.743	
I find satisfaction in deliberating...	.563	
I only think as hard as I have to...		.759
I don't care how or why it works....		.750
I like tasks requiring little thought...		.644
% of Variance Explained	**39.3**	**15.1**

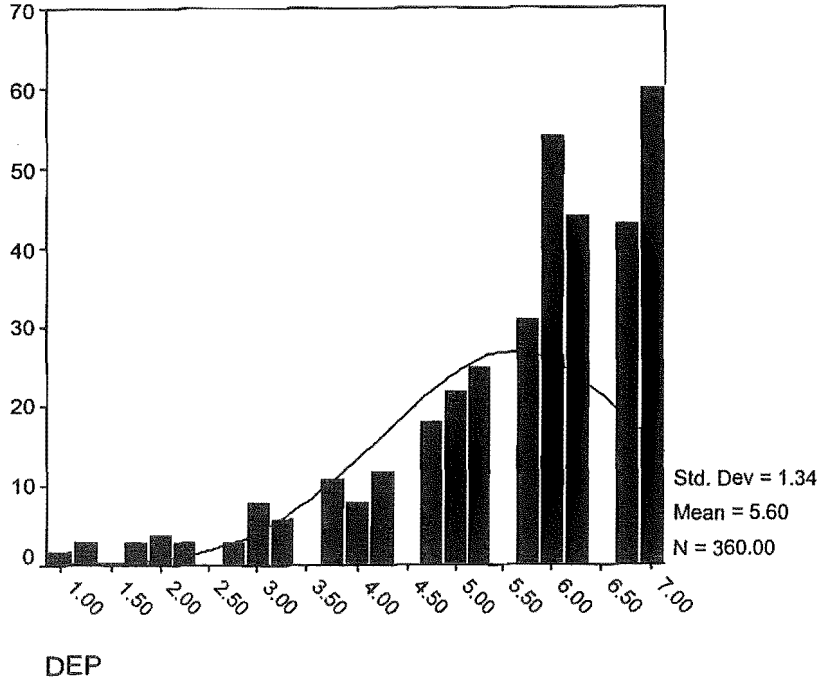
APPENDIX SIX:

Scale Distributions (Histograms)

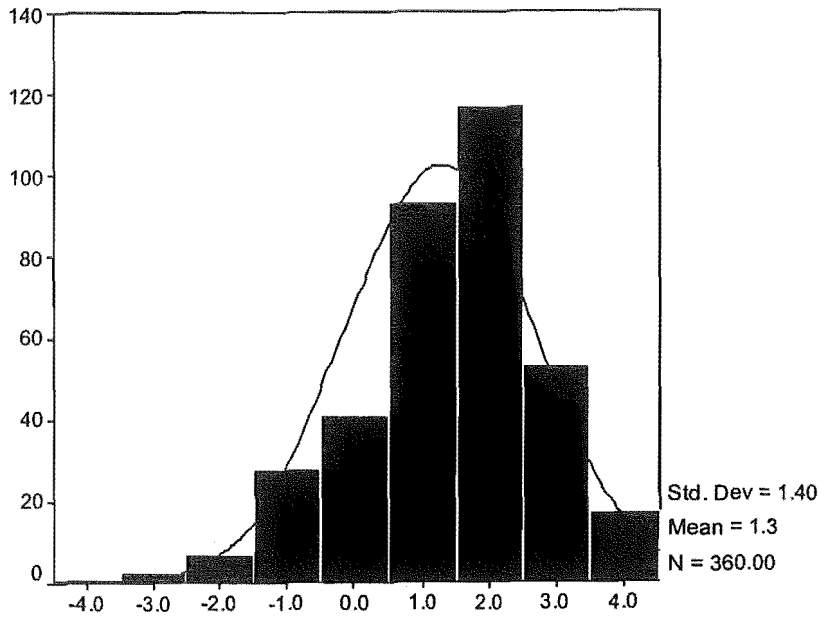
Histogram (with Normal Curve) for Perceived Level of Interactivity Scale



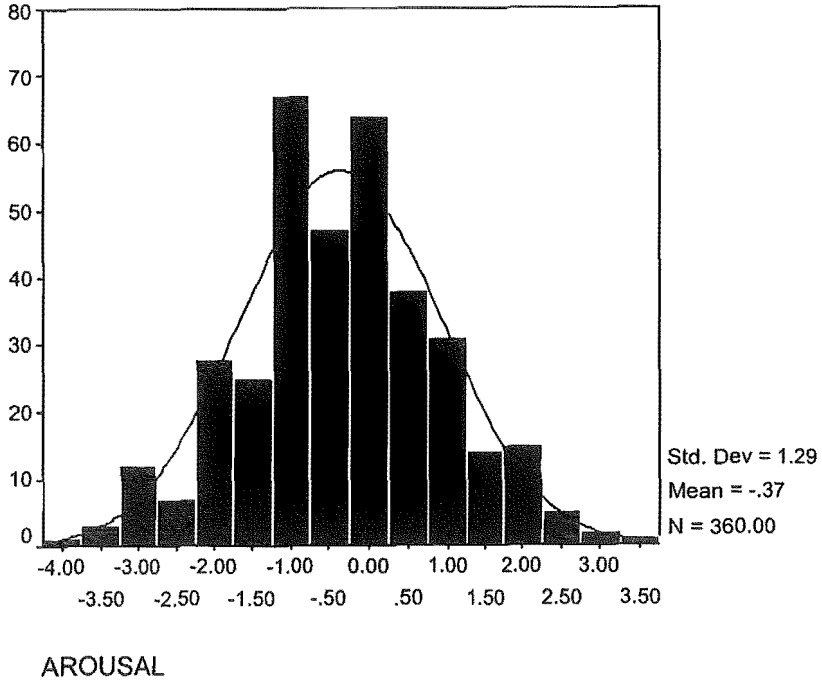
Histogram (with Normal Curve) for Perceived Depth of Information Scale



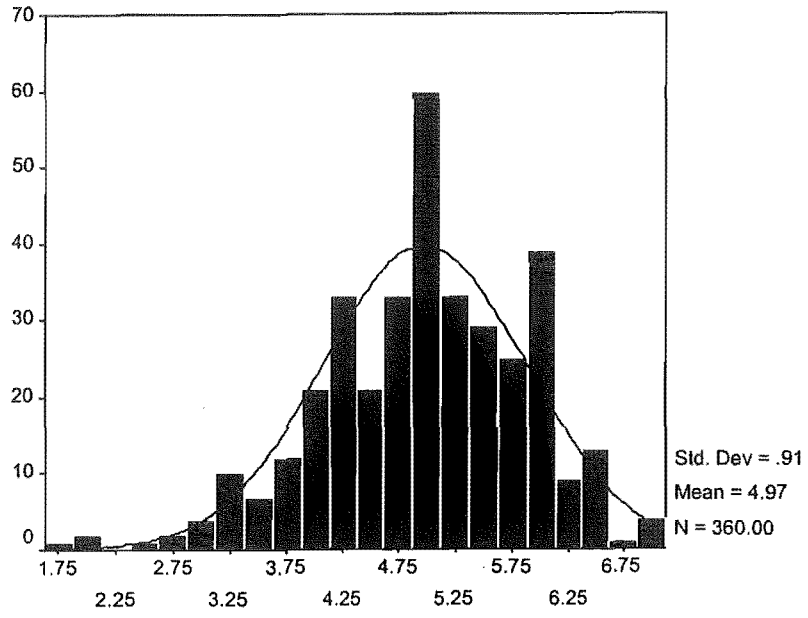
Histogram (with Normal Curve) for Pleasure Scale



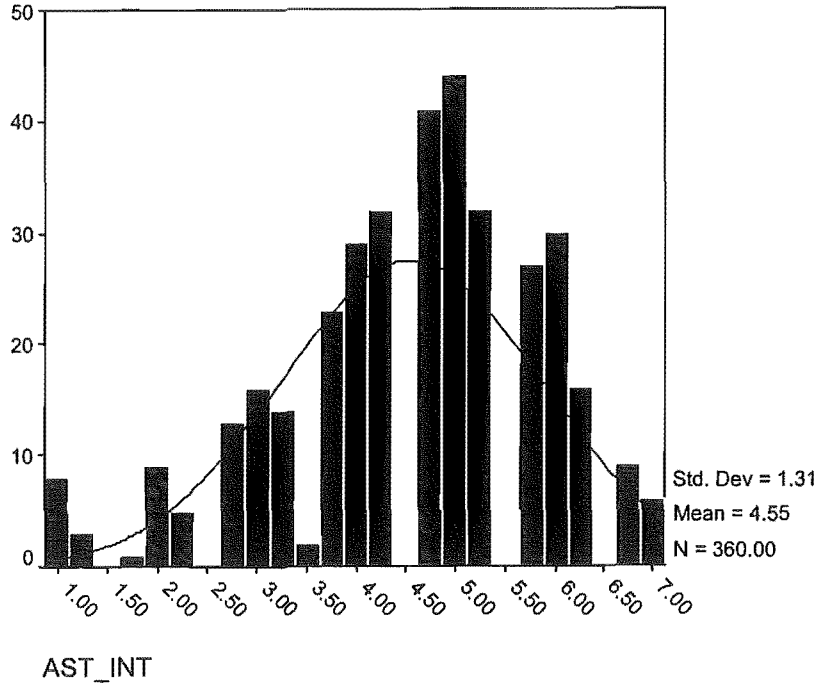
Histogram (with Normal Curve) for Arousal Scale



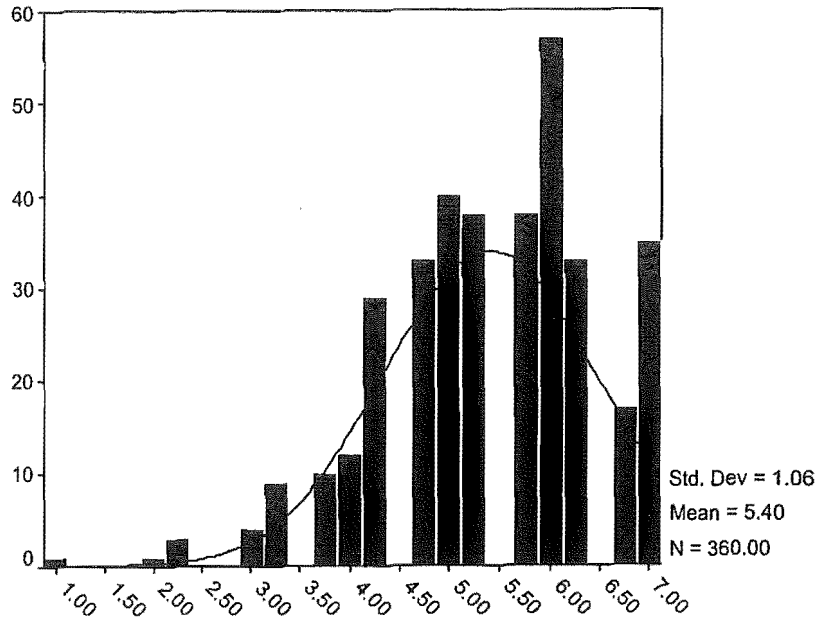
Histogram (with Normal Curve) for Attitude toward the Website (A_{ST}) Scale



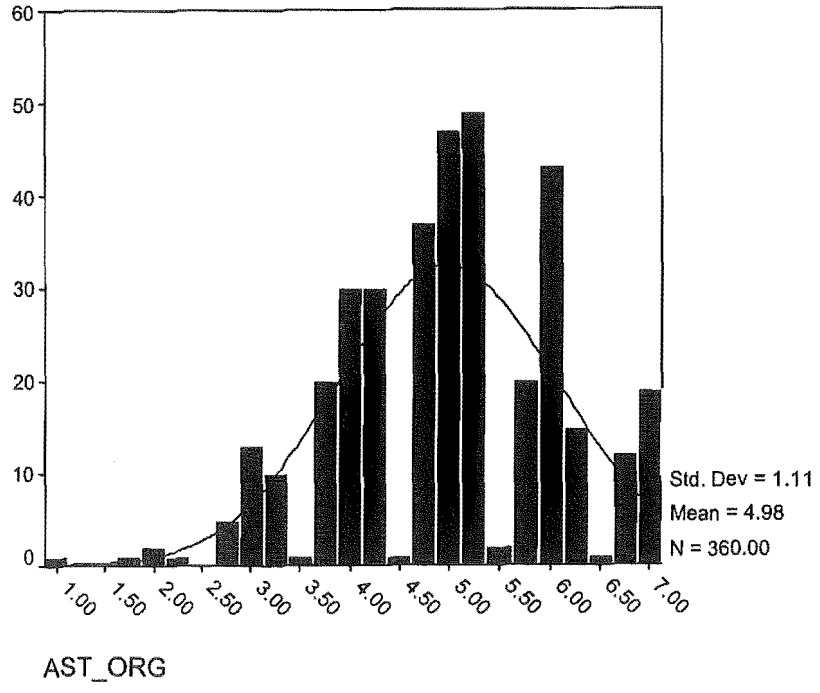
Histogram (with Normal Curve) for A_{ST} *Interestingness* Subscale



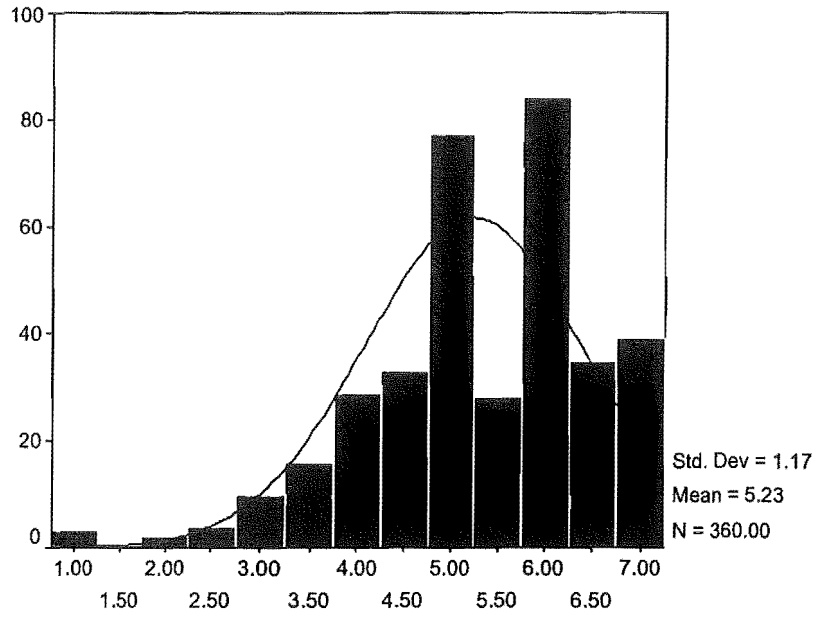
Histogram (with Normal Curve) for A_{ST} *Utilitarianism* Subscale



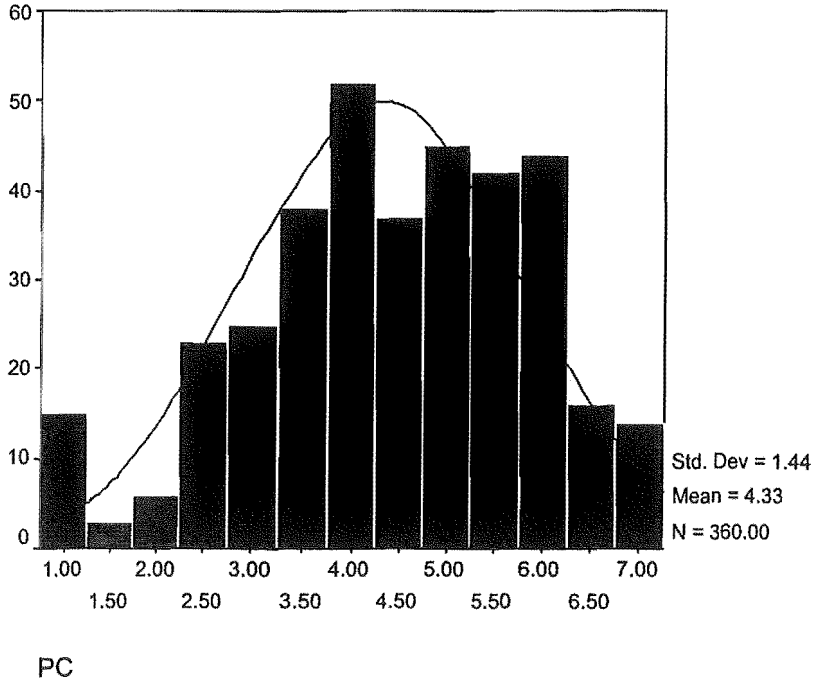
Histogram (with Normal Curve) for A_{ST} *Organisation* Subscale



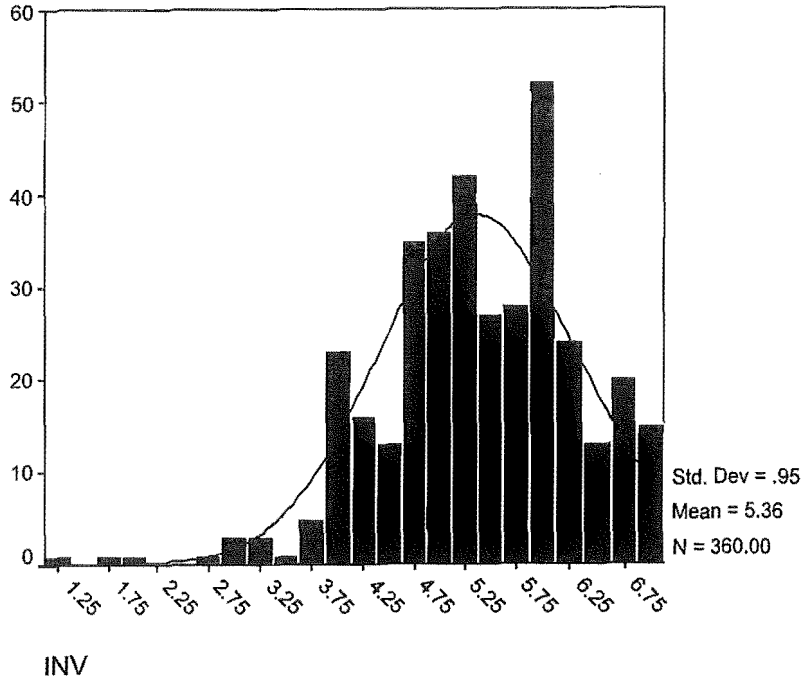
Histogram (with Normal Curve) for Attitude toward the E-tailer Scale



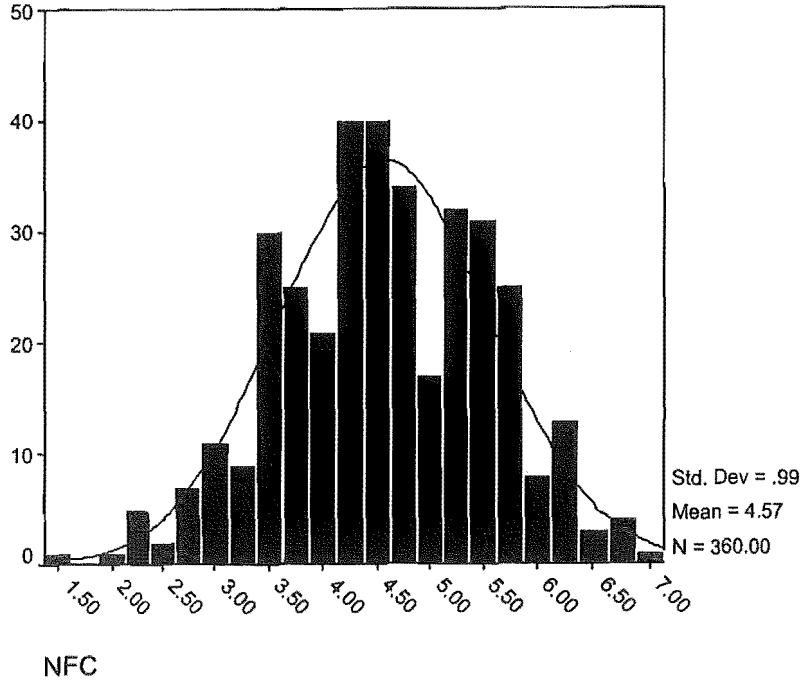
Histogram (with Normal Curve) for Purchase Consideration Scale



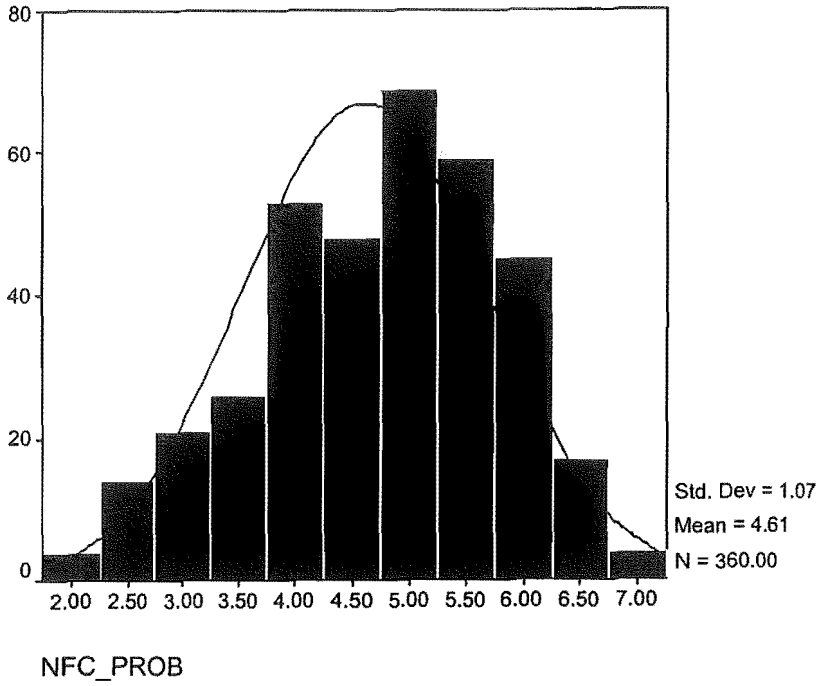
Histogram (with Normal Curve) for Involvement Scale



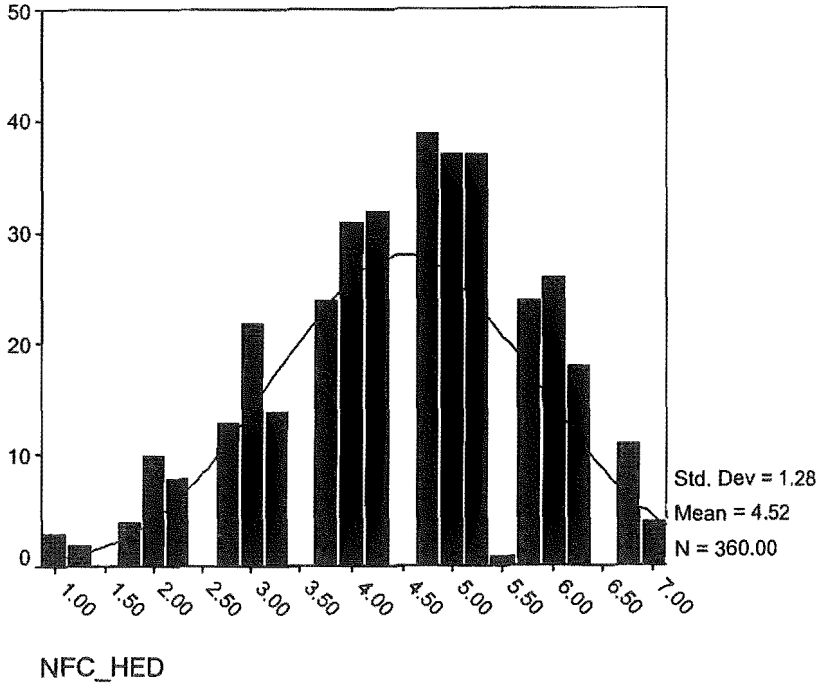
Histogram (with Normal Curve) for Need for Cognition (NFC) Scale



Histogram (with Normal Curve) for NFC *Problem-Solving* Subscale



Histogram (with Normal Curve) for NFC *Hedonic* Subscale



APPENDIX SEVEN:

Descriptive Statistics for Pleasure and Arousal

Descriptive Statistics: Pleasure by Condition

Level of Interactivity	Depth of Information	Mean	Std Dev	N
Low	Low	0.36	1.72	40
	Medium	1.16	1.30	40
	High	1.39	1.61	40
	Total	0.97	1.60	120
Medium	Low	1.18	1.51	40
	Medium	1.19	0.89	40
	High	1.31	1.31	40
	Total	1.23	1.25	120
High	Low	1.61	1.01	40
	Medium	1.53	1.52	40
	High	1.65	1.22	40
	Total	1.59	1.26	120
Total	Low	1.05	1.53	120
	Medium	1.29	1.26	120
	High	1.45	1.39	120
	Total	1.26	1.40	360

Descriptive Statistics: Arousal by Condition

Level of Interactivity	Depth of Information	Mean	Std Dev	N
Low	Low	-0.77	1.31	40
	Medium	-0.52	1.33	40
	High	-0.05	1.52	40
	Total	-0.44	1.41	120
Medium	Low	-0.33	1.41	40
	Medium	-0.58	1.31	40
	High	-0.46	1.19	40
	Total	-0.46	1.30	120
High	Low	-0.15	0.97	40
	Medium	-0.25	1.29	40
	High	-0.21	1.12	40
	Total	-0.21	1.13	120
Total	Low	-0.42	1.26	120
	Medium	-0.45	1.31	120
	High	-0.24	1.29	120
	Total	-0.37	1.29	360